Printed Documentation

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What Can the Software Do?

What Can the Software Do?

What is it?

For fast, on-site labels with bar codes, this software is the time-tested industry standard. The software is a product identification and bar code labeling software package, that enables you to custom design your own labels, on demand, quickly and easily. Combining a database for storage of variable information and a separate capability for serialized fields, this software has been designed to meet the requirements of a wide variety of users.

What can it do?

Offering a user friendly interface, it's easy to print bar codes, graphics, text, lines and boxes to any number of supported bar code thermal/thermal transfer printers, as well as, dot matrix, laser, ink jet printers and any Windows Printer Driver, including color printers.

With its WYSIWYG (What You See Is What You Get) interface, designing labels is extremely fast and accurate, saving you time and money in label production. Once the label is designed, you have the flexibility to print thousands of the same label. You can also print individual, unique labels by reading information from a database, an external text file, serial file, operator entered variable data, or data from an external input device.

Database capabilities provide a powerful and flexible system for handling many different types of variable data, such as text, graphics and external text files. It comes complete with its own dBASE® compatible database. It provides complete connectivity to all 32-bit ODBC (Open DataBase Connectivity) compliant databases, including Access®, Oracle®, Paradox®, Btrieve®, AS/400® and Sybase®.

The software allows a specific incrementing serial number to be embedded into a database field; and this allows each record to have a unique serial number. When printing a format, this serial number is automatically updated in the serial file.

Command files can be used to trigger the software from within other applications. With ActiveX® object controls, you can easily interact with any 32-bit Windows application making integration a snap!

Accompanied with a utility program called LABELCOM®, RS-232 communications with external accessories, such as a scale or bar code scanner, are made easy.

By allowing you to preview your selection, you will save time with the thumbnail feature available for fonts, graphics and label formats.

The ability to use variable graphics allow you to define a single format and bring in the correct graphic along with other database information.

Pictures can be created using Microsoft Paintbrush®, Adobe Photoshop®, Jasc Paint Shop Pro® and many other graphics applications. Files with the .EPS extension can only be included on formats designed for a Postscript printer.

Not only are linear bar codes such as UPC-A, UCC/EAN-128 and Code 39 supported, but also two-dimensional bar codes such as PDF417, MaxiCode, DataMatrix and QR Code, based on the printer in use. With its variety of supported bar codes, the software complies with automotive, government, health care, shipping container standards, FDA, Department of Transportation and OSHA labeling requirements.

Powerful features like enhanced arithmetic functions, format specific serial numbers, user defined consecutive numbering, date/time stamping, and the ability to calculate sell by dates, will meet all of your demanding labeling needs.

Included is support for UNC (Universal Naming Convention) which allows you to use the assigned name for a network printer instead of the specific path to access the printer. While saving you time and money, a multiple-seat license is available for easy network use.

Print to any printer in the world that is either connected to a print or device server or one that has an internal Ethernet card using IP Printing.

Customized Reports provide tighter control over your label production by printing reports that display information specific to label formats that have been edited or printed.

With Data Validation you can increase label accuracy, reduce human errors, labor costs and label waste by controlling operator-entered data. Data can be verified before it is placed on the label.

By using the software, you can connect to MRP II (Manufacturing Resource Planning), ERP (Enterprise Resource Planning) systems such as SAP, Oracle, PeopleSoft, JD Edwards and BAAN, as well as MES (Manufacturing Execution Systems).

With its unique print queue, you have the ability to manage over 200 print jobs at the same time, while addressing up to 255 printers from only one PC.

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Software Licensing Agreement

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The various software products are licensed in similar ways with a few exceptions.

The Multi-User product comes standard with a certain number of client seats. The number of authorized concurrent users covered by the license for the software will be visually displayed to you by pressing F3 while the software is running. You may add additional clients to your license at any time.

The Terminal Server product is licensed on per server basis. Any number of users may use the software on a single Terminal Server machine.

The Platinum, Gold, Silver, Print Only and Start products are to be used only on a single computer.

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If you need additional help visit the Technical support page of our website at:

http://www.tharo.com/support_easylabel.php

Search our extensive Problem Cause Solution database, post a message to our Message Board, or download documentation on a variety of solutions.

Before You Begin

Your software disk will contain a file called README. The README file contains important information concerning any changes to the program or special instructions.

It would also be beneficial for all users to work through the tutorial supplied with the software. EasyTutor is available in English and German, it can be downloaded to the PC by:

- Inserting the CD into your CD-ROM drive. Follow the on-screen installation instructions.

- If Autorun is not enabled, choose Start | Run

- Type d:\setup (where d:\ is your CD-ROM drive), click OK.

- Follow the on-screen installation instructions.

In order to run EasyTutor, the cd must be installed in your CD-ROM drive.

Passwords

Each User Identifier can be up to 16 characters long and passwords can be as many as 16 characters long. To enter the software, the correct User ID and Password must be entered. If the correct password is not entered within several attempts, the software will be terminated and you will be taken back to Windows. For security purposes, when entering a password, a * will be displayed for each character in the password. Individual users have the ability to change their own passwords, however, only the program manager may view or change all user passwords.

Passwords can be assigned to each user who will be permitted access to the software. Each user can also be granted permission to use any or all subfunctions.

Users and passwords are assigned by selecting **Settings | Users** from the menu bar or by selecting the User icon on the Function Toolbar. See Users for more information

Hot Keys

Several keys have special meanings in the software. A short description of their functions follows:

Left Mouse Button

Allows you to choose menu options, icons, etc. by pointing and clicking once on the selected item. A fields parameter can be displayed by double clicking on the field once that field has been selected.

Right Mouse Button

Displays a short cut menu which allows you to Cut, Copy, Past, Erase, or view the Field Specifications of the selected field.

CTRL + Left Mouse Button

Allow you to select multiple fields to view and edit similar field parameter settings.

F2

Displays the Print Queue screen.

F3

Displays the WIBU-KEY Control Panel.

CTRL + Z

Undo Function - will undo the most recent editing or formatting action and return to its previous setting.

CTRL + ENTER

Tells the software to start a new line. This key combination can be used when entering paragraph information.

ESC

Generally means to terminate the current function. When a menu is displayed, the ESC key has the same function as Alt + Q for quit.

ARROW Keys/ARROW Keys + SHIFT

When moving on the format display, the four arrow keys move the format pointer, the box representing a field or the corner of a box being expanded. The field or cursor will move .01 inches or .1mm. If the arrow keys are used while the SHIFT key is depressed, the movement will be in .1 inch or 1.0 mm increments. The arrow keys also allow you to make a selection among a given option. When selecting a file name, the Up or Down, Right or Left arrow keys move the highlighted bar to the next or previous file name.

TAB / TAB + SHIFT / TAB + CTRL

When entering data on specification input screens, the TAB key moves the highlighted bar to the next item, the SHIFT+TAB key combination moves the highlighted bar to the previous item. However, the arrow keys allow you to make a selection among the given option. When selecting a file name, the Up or Down, Right or Left arrow keys move the highlighted bar to the next or previous file name. Using the CTRL+TAB key combination moves through the TABS on the field parameter dialog box.

ENTER

Means that the information currently being entered is complete.

PgUp/PgDn

When asked to enter a file name, the software presents an alphabetized directory, across the screen, of the available files. If there are more file names than can be viewed at once, PgDn moves to the next screen and PgUp will move back to the previous screen.

HOME/END

When moving on the format display, HOME will move the format pointer to the upper left corner of the format. END will move the format pointer to the lower right corner of the format.

H / V

Allows you to center a field horizontally, vertically or both. While a field is highlighted to be moved, pressing the H key will place it horizontally, the V key will place it vertically and pressing the H key followed by the V key will center the field on the format.

ALT + number

Some font options have International Characters available. They are accessed by holding down the Alt key and typing the corresponding numbers on the Numeric Keypad, found on the ANSI chart, for the character of choice. Character options

will vary depending on the printer in use. If your keyboard is supplied with International Characters, you may access them directly by typing the appropriate keys. Refer to Appendix E for more information on producing extended characters.

ALT + letter

All Menu functions and Specification Screen items can be accessed using the ALT key and typing the corresponding underlined letter. For Specification Screen items, some letters are used more than once. If a letter is used more than once, press ALT + the letter again to get to the correct screen item.

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Installation

System Requirements

To run the software, you will need:

- Windows 98SE/ME/NT4/2000/XP/Vista
- A minimum of 32 MB RAM
- 25-50 MB of hard disk space
- CD-ROM Drive
- Internet Explorer 5.0 or higher
- Parallel port or USB port
- Software Enabling Key

Software Installation

To install the software follow these steps:

- Insert the CD into your CD-ROM drive. Follow the on-screen installation instructions.

- If Autorun is not enabled, choose **Start | Run**
- Type **d:\setup** (where d:\ is your CD-ROM drive), click OK.
- Follow the on-screen installation instructions.

See Software Key Installation for more information.

Software Key Installation

To use all the capabilities of the software, you will need to install a special software enabling device called a Software Key. A Software Key is supplied when you purchase the software. To install the Software Key, do the following:

1) Remove any cable from a parallel printer port of your choice on the back of your PC. If you have a USB Software Key you can skip this step

2) Plug the Software Key into the parallel printer port and secure with the attached screws. Or, if you have a USB Software Key, do NOT plug in the key until you are prompted to do so by the installation software!.

WARNING: Do not plug the Key into a SERIAL port.

3) If a printer is to be attached to the port, plug the printer cable into the open end of the Software Key and secure with the attached screws.

NOTE: It is not necessary to attach a cable to the open end of the Key if the parallel port is not being used by a printer. However, the Key MUST be attached to a parallel port even though you may be doing serial printing.

4) The Software Key Drivers are automatically and transparently installed during the normal software installation. If you receive an error message stating that there was a problem installing the Software Key Drivers, you must manually install them from the \WIBU folder on the CD.

Windows NT: When installing the software under Windows NT, you must have "Administrator" privileges in order for the Software Key Drivers to install. Contact your network administrator for more information.

Multi-User Key Installation

For information regarding the installation and troubleshooting of the Multi-User version and the Multi-User Key, please refer to the QuickStart Guide and Network Administrator's document on the software's CD.

Running the Software

NOTE: Printers should always be on and in the ON-LINE/READY mode to receive data prior to starting the software.

To start, double-click on the program icon.

In order to have full print functions, you must have the software protection key connected to the parallel port. Without it, you may be able to print one or a couple of labels at a time. The word "Demo" may also appear on the label.

Running Windows Terminal Server

Only the Platinum version of software will run under Windows Terminal Server. The special Terminal Server Key indicated by a round "T" coded label applied to it is required.

For more information on using and printing from the software under Windows Terminal Server, please refer to the Terminal Server document in the 'Term_svr' folder on the software's CD called "TerminalServer.doc".

Program Options

General

Version	Measurement	Tab on CR	Auto Submit
Save Data	Duplicate Serial Number	Index Case Sensitive Searches	All or Marked Records
ISO Week of the Year	Show Field List	User Sign on Required	Auto-Size Input Field
Computer Type			

Version
Select Full if you have a hardware key.

Select Demo if you do not have a hardware key.

Measurement
Indicate whether measurements will be based on inches (I) or millimeters (M).

Tab on CR
This applies when inputting data into when-printed fields. Select Yes to allow a carriage return or the Enter key to work like the Tab key. By selecting Yes, the cursor will move from one input prompt to the next when the Enter key is pressed. When all input prompts are filled, pressing Enter will advance to the print screen.

Select No to use the Tab key to move the cursor from one input prompt to the next.

Auto Submit
Select No to display label preview after entering variable data for printing.

Select Yes to skip preview and submit print job immediately when variable data is entered or changed.

Save Data
Select Yes to have the last previously entered variable data for when printed fields to be remembered for the next printing session.

Duplicate Serial Number
Select Yes to allow multiple labels to be printed with the same serial number.

Select No to prevent printing duplicate serial numbers.

Index Case Sensitive Database Searches
Select Yes to make internal database index searches case sensitive (the same lower and upper case character are not equal).

Select No to make index searches case insensitive (the same lower and upper case characters are considered equal)

All or Marked Records
Sets the default database selection in the print request screen when printing a group of records.

Select All Records to print all the records in the database.

Select Marked Records to print a series of previously chosen records.

ISO Week of the Year
Select Yes to calculate the week of the year according to the ISO 8601 standard.

Show Field List
Select 'Yes' to always show a list of available field names on the screen during label design.

User Sign on Required
Select 'Yes" to require user identification and password to be entered when the program is started.

Auto-size input field
Selecting this option will automatically resize input boxes as text is entered. This applies to When Printed fields at print time.

Computer type
Choose IBM for all IBM compatible computers.

NEC is only relevant for NEC computers sold in Japan.

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Language

Help Language
Choose the language that you wish to display the help system in.

Language
Choose the language that you wish the application to display in.

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Search/Paths

Define Search Path Search Path

Define Search Path
Select 'Yes' to define the search path for all picture files, database files, text files, and serial files which are used by the format.

NOTE: Existing formats MUST be re-saved in order for the new path to be used in place of the old path. This function should NOT be used with formats that connect to an external database via ODBC connection.

Search Path
Enter the path to the files in the corresponding text box or browse to location by selecting the 'Browse' button.

NOTE: Existing formats MUST be re-saved in order for the new path to be used in place of the old path. This function should NOT be used with formats that connect to an external database via ODBC connection.

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Processing

Error Processing	Re-Send Downloaded Data	Disable Test Print	Cent Substitute
International Characters	Use Slashed Zero	Image Processing	Command File Monitor
Default Command File	Delete Command File		

Error Processing
This option affects the processing of command files when a database record cannot be found. Select Yes if you want database field values set to 0 and the label printed. Select No if you want to stop printing when a record cannot be found in the database.

Re - Send Downloaded Data
Select Yes, if you want a clear signal to be sent to the printer at the beginning of each job, and all downloaded data (graphics, fonts, etc.) will be re-sent, otherwise select No.

Disable Test Print
Select Yes to disable the Test Print function from the print screen. It will still be available while editing a format.

Cent Substitute
Select Yes to print the tilde (~) as a cent symbol (¢).

International Characters
Select ANSI if Text Files (command, data, etc.) are created under Windows using ANSI characters.

Select OEM if created under DOS.

Use Slashed Zero
Select No to use Unslashed zero.

Select Yes to use Slashed zero (if available)

Image Processing
Indicate the type of processing to be used. Enhanced Image Processing will allow you to open many more types of images. To display and print in color, you must use Enhanced Image Processing.

Command File Monitor
Select Yes to enable continuous automatic checking for the existence of a command file whenever the application window is minimized.

Select No to disable monitoring.

Default Command File
When command file monitoring is selected, enter the path/name of the command file.

Delete Command File
Select Yes to delete the default command file after processing. This is useful when an external program needs to know that the command file has been processed. Select No to retain the default command file after processing. Command files that are processed by "drag-and-drop" onto the EASYLABEL window are NEVER deleted, regardless of the setting of the "Delete Command File" program option.

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Appearance

Normal Text	Highlighted Text	Phantom Fields	Primary Background
Alternate Background	Format Background	Placement Grid	Large Tool Icons
Tabbed Dialog Boxes			

Normal Text
Select the predefined color or create your own color, by selecting the 'Custom' button, for all Normal Text

Highlighted Text
Select the predefined color or create your own color, by selecting the 'Custom' button, for all Highlighted Text

Phantom Fields
Select the predefined color or create your own color, by selecting the 'Custom' button, for all Phantom Fields.

Primary Background
Select the predefined color or create your own color, by selecting the 'Custom' button, for the Primary Background.

Alternate Background
Select the predefined color or create your own color, by selecting the 'Custom' button, for the Alternate Background.

Format Background
Select the predefined color or create your own color, by selecting the 'Custom' button, for the Format Background.

Placement Grid
Select the predefined color or create your own color, by selecting the 'Custom' button, for the Placement Grid.

Large Toolbar Icons
Select Yes to show large icons in all of the toolbars. Select No to show the standard size (small) icons.

Tabbed Dialog Boxes
Select Yes to show dialog boxes in standard tabbed format where items are grouped by function. Select No to use single page dialog boxes where all items are presented in a single list.

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Security

Minimum User ID Length
Enter the number of characters to be used as the minimum length for a User ID. The Software will not allow a user to be added unless the length of the User ID is equal to or greater than this number. Leaving this option set to '0' means there is no Minimum User ID Length.

Minimum Password Length
Enter the number of characters to be used as the minimum length for a Password. The Software will not accept password unless the length of the password is equal to or greater than this number. Leaving this option set to '0' means there is no Minimum Password Length.

Complex Password
Select 'Yes' to force passwords to contain at least one numeric (0-9) or special (!@#$% etc.) character.
Select 'No' to allow simple passwords composed of letters only.

Password Reuse Times
Enter the number which defines the password reuse policy. The number entered here will be the number of passwords the software 'remembers'. The software will not allow a user to re-use one of these passwords. Leaving this option set to '0' means no passwords are remembered and the user would be able to keep using the same password.
For example: entering a 3 here will prohibit users from re-using their 3 last used passwords.

Password Expiration Date
Enter the number of days after which the password will expire. The next time the user logs on with the old password, they will be prompted to enter a new password before being able to use the software.

Username/password is required for saved changes
Select 'Yes' to require the user to enter a username and password for any changes that get saved for formats, serial files, database files, job lists, etc. Select 'No' for the user to NOT be prompted to enter a username and password when saving these files.
NOTE: This option is only available when the 'User Signon Required' option is set to 'Yes'.

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Logging

Log User Actions	User Log Pathname	Maximum User Log Size	User Log Overwrite
Log Add Event	Log Change Event	Log Delete Event	Log Login Event
Log Failed Login Event	Log Logout Event	Log Password Change Event	Format Change History
Format History Path	Log File Deletions	Delete Log Pathname	Prompt for Change Reason
Create Print Images	Print Image Path	Database Change Log	Database Log Path

Log User Actions
Selecting 'Yes' enables logging of user actions, such as changes to the user configuration or users logging in or out of the program.

User Log Pathname
Enter or browse to the path where you would like the user logs stored. This path should also include the name of the log file. The default name for the user log is 'user.log'. The User Log that is created is an encrypted file and the Log Reader must be used to view its contents.

Maximum User Log Size
Enter the size limit of the user log file, in Kilobyte (1000 byte) increments.
For example, enter 2000 to set the maximum log size to 2MB (2 megabytes). The log file will then grow up to 2MB in size.
A value of 0 means that the size of the log file is not limited.

User Log Overwrite
Select an option for processing user events in the case of the user log reaching its maximum size. *Overwrite Events as Needed* means to replace the oldest events with the newest events. *Do Not Overwrite Events* means none of the events will be overwritten.

NOTE: The *Do Not Overwrite Events* option is designed to be used when there is no *Maximum User Log Size*. In fact, when *User Log Overwrite* is set to 'Do Not Overwrite Events' any value that is entered in for *Maximum User Log Size* is ignored. The User Log file will keep getting larger regardless of the maximum size. This is done so that there is no loss of data.

Log Add Event
Select 'Yes' to log the addition of a new user. These events will then be stored in the User log.

Log Change Event

Select 'Yes' to log any changes that are made to a user's information. These events will then be stored in the User log.

Log Delete Event
Select 'Yes' to log the deletion of a user. These events will then be stored in the User log.

Log Login Event
Select 'Yes' to log all successful user logins. These events will then be stored in the User log.

Log Failed Login Event
Select 'Yes' to log all failed login attempts. These events will then be stored in the User log.

Log Logout Event
Select 'Yes' to log all program shutdown (logout) events. These events will then be stored in the User log.

Log Password Change Event
Select 'Yes' to log all occurrences of when a user changed their password during program sign-on in the User log.

Format Change History
Select 'Yes' to keep a history of all changes made to label format files. This will create a backup format file anytime a format is saved. The format must have its 'Save Backup Format' option enabled.

Format History Path
Enter the path of the directory where the label format backup files will be stored. Leave this option blank to store backup files in the same directory as the label format file.

Log File Deletions
This option will keep track of file deletions. The ‘delete log’ will record the user, date, time, and pathname of any files that were deleted by using the **File | Erase** selection from the menu bar. This makes tracing unauthorized deletions as easy as looking at the log file.

Delete Log Pathname
Enter or browse to the path where you would like the delete logs stored. This path should also include the name of the log file.

Prompt for Change Reason
Select 'Yes' to require users to enter text describing the reason for changing a label format. This text is displayed when opening the format along with a thumbnail preview of the format at the bottom of the Open box.

Create Print Images
Selecting 'Yes' will create an image file of each print job for any format that has 'Save Print Image' option enabled.

Print Image Path
Enter the path of the directory where the format print image files are to be stored.

Database Change Log
Select 'Yes' to create a log of changes made to .MDB databases. This log is only updated when using the supplied database editor. A different editor (Microsoft Access for example) will not log the changes.
NOTE: If database logging is turned on and the database structure is changed, the old log is saved and a new log is created. This can cause a lot of log files to be created if you frequently change the database structure.

Database Log Path
Enter the path where the database change logs should be written.

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Users

User Sign-On/Password Protection	Adding a User	User Identifier	Password
User Name	User Description	Controlled Access Areas	User can change Password
Password Never Expires	User Account Disabled	Changing Users	Deleting User

User Sign-On/Password Protection
In order to prevent unauthorized use of the software, the program is supplied with user sign-on requirements and user password protection. Each user may be assigned a separate password and individual access to Menu Functions.

The Manager Functions allows the person responsible for maintaining security to view or change any or all passwords, as well as program configuration options and printer configuration.

Adding a User
To add a user, choose **Settings | Users** from the main screen, click the Add a User icon or choose **Edit | Add** from the menu bar.

User Identifier
Up to 16 characters to identify a user of the software. This is the name the user will log into (sign in) the software under. May contain a space, digits, letters or a period.

Password
Enter the initial password to be used by the user, must be 16 characters or less.

User Name
This is an optional field where the user's real name can be entered.

User Description
This is an optional field where a description of the user can be entered.

Controlled Access Areas
You may select Yes to allow or No to disallow access to the following functions:

- Update Format
- Edit in Print Format Mode
- Print Format
- Print Report
- Database Functions
- Manager Functions

In order to prevent unauthorized changes to data on the print screen, user passwords should be established and user rights be assigned by management. A user that does not have editing rights, can not make changes to data on any screen including the print screen. In this manner data security can be controlled.

User can change password
Select 'Yes' if you want user to be able to change their password. Select 'No' if you do not want user to change their password. If the user's password expires and they are not permitted to change their password they will be prompted to contact the administrator for a new password when they try to log in.

Password Never Expires
Select 'Yes' to set this user so that their password never expires.

User Account Disabled
Select 'Yes' to disable this user account. If the account is disabled, the user cannot access the program until the account is enabled. Select 'No' to enable user to access the program.

Changing an Existing User
To change an existing user, choose **Settings | Users** from the main screen, highlight the correct user, then click the Change User Definition icon or choose **Edit | Change** from the menu bar.

The user definition screen will be displayed and is ready for editing. Click Change to change any data for this user. Click Cancel to leave data unchanged. If any changes are made, choose OK to save any changes for this user or choose Cancel to abort changes.

Deleting a User

To delete an existing user, choose **Settings | Users** from the main screen, highlight the correct user, then click the **Delete a User** icon or choose **Edit | Delete** from the menu bar.

A Dialog Box will appear asking you to confirm this action. Click OK or press ENTER to delete the user. Click Cancel or press ESC to reconsider.

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General

Entering a Format Name	Printer Model	Default Printer	Description
Display Orientation	Fields Currently Defined	Auto Field Name	Save Backup Format
Save Print Image	Tracking Report by Batch		

Entering a Format Name

Select **File | New** from the menu bar. A dialog box will appear. Click on Save as Type to choose the file type, such as format, database, serial file. You will be prompted for the name of the new Format File. At the same time an alphabetized listing of the present files in your default directory will be displayed across the screen. If there are more format names than can be shown on one screen, the PgUp and PgDn keys will move to your next screen(s) or back to your previous screen(s).

The file information box will display the Last Update and Description information of any of the presently defined formats. Press the arrow keys to select a specific format name. The description of the format will appear at the bottom of the dialog box.

To enter the New Format Name, place the cursor in the data entry box below this prompt.

The software supports long file names as supported under Windows 95b and higher.

You will now be presented with the Format Specification Screen. The information you enter controls specific aspects of the format.

The following describes the items that appear on your Format Specification Screen:

Printer Model

Enter a choice in order to specify which model of printer is to be used.

Default Printer

Select the default printer. When this format is printed, the selected printer will be selected as the default destination printer. This is useful when more than one

printer of the same type is installed to ensure that the job gets sent to the correct printer.

Description
Allows for a short sentence describing the format being created.

Display Orientation
The orientation used to view and edit the format on the display screen. The arrow in the upper left corner of the format will display indicating the direction of the label stock as it comes out of the printer.

Fields Currently Defined
This field is for informational purposes only. The number of defined fields on the format is given.

Auto Field Name
Select Yes to have the field names for barcodes, text and graphics to be automatically generated. Select No to leave the field names blank when fields are generated.

Save Backup Format
Selecting 'Yes' will save a backup copy of the format any time it is changed. This option should not be turned on until the label format is in its final form. In order for this to work, 'Format Change History' in the Program Options must also be enabled because the 'Format Change History' option allows the administrator of the Software to disable the creation of backup formats globally without having to turn the option off in each individual format.

Save Print Image
Selecting 'Yes' will save an image file of print jobs for tracking or auditing purposes. This option should not be turned on until the label format is in its final form. The 'Create Print Images' option in the Program Options must also be enabled for the Print Image to get created because the 'Create Print Images' option allows the administrator of the Software to disable the creation of print images globally without having to turn the option off in each individual format.

Tracking Report by Batch
Selecting 'Yes' will update the format tracking report for each batch of labels printed. This can be used to record the data of RFID tags, increment/decrement fields and database printing. Note that this will slow down the printing process. The default setting of 'No' will update the tracking report only at the end of the job.

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Printer Settings

Print Mode	Print Darkness	Use Ribbon Saver

Presentation Position	Label Sensor	Dot Expansion
Print Speed	Backfeed Speed	Label Offset
Memory Card Download	Resolution	Direct Thermal
Bar/Space Adjustment		

Print Mode

- Batch Mode
- Demand Mode
- Tear-Off Mode
- Applicator Mode

Print Darkness

A number to set the desired print darkness (the print head temperature setting). Heat control allows you to enhance quality on some formats. Choosing a higher number increases the darkness of the print.

Use Ribbon Saver

Select Yes to enable the ribbon saver feature on the printer. Select No to de-activate the Ribbon Saver.

Presentation Position

Use this function to advance the label past the print head for easier removal. This function is mainly intended for "on demand" and "tear off" modes of printing. After the label has been removed, the printer will back feed the label stock, lining up the leading edge of the label for the printing of the next format.

Label Sensor

Indicate which type of gap sensing is appropriate for the label stock being used. Choices vary based on the printer being used and may be any of the following:

- See Through Sensor
- Reflective Sensor (Top)
- Reflective Sensor (Bottom)

On Printronix printers **ONLY** these last two selections are also available

- Advanced Gap Used when using media that has liner gaps between die cut labels with black background on Printronix printers
- Advanced Notch Used when using media with notches or holes that interrupt a black vertical line on the underside of the media on Printronix printers.

TEC Printers Provide ONLY the following selections for Label Sensor:

- Transmissive Sensor (Using Normal Labels)
- Reflective Sensor (Using Normal Labels)
- Transmissive Sensor (Using Preprinted Labels)
- Reflective Sensor (Using a manual threshold value)

Dot Expansion
When adding a new format, select 1, 2 or 3 to specify the dot size expansion to be used. The higher the number, the greater the potential print speed and the lower the character resolution.

Print Speed
Different values will allow for printing at different speeds. Speed control allows you to enhance print quality on some formats. Expect some degradation in print quality at the higher speeds.

Backfeed Speed
If the firmware level of the printer supports it, this option will set the Backfeed Speed. Backfeed Speed refers to the speed that the label stock returns back to printing position after a presented label is removed. Select the desired Backfeed Speed from the list. Depending on the specific printer in use, values may range from 2"(50mm) per second up to 7.9"(200mm) per second.
If DEFAULT is selected the command is not sent. Select DEFAULT if the printer's firmware does not support it. Selecting Backfeed Speed on a printer that does not support it may cause a protocol error.

Memory Card Download
Use this feature if the label format will be downloaded to a memory card using an Apollo printer. It will suppress features that are not available on the memory card.

Label Offset
The starting print position of the label. Negative numbers move the start position down the label and positive numbers move the start position up the label.

Bar/Space Adjustment
Adjusts the bars and spaces in a bar code. Used for Windows printer drivers only. Under most printing conditions, if you are using a laser printer, an ink jet or a dot matrix printer, a "Bar/Space Adjustment" selection of 2.0 prints the bar codes within specification. If ink or toner spreading causes bars to print too wide, INCREASE this number until you have achieved an acceptable bar code. If you are using a Thermal/Thermal Transfer bar code label printer, a "Bar/Space Adjustment" selection of 1.0 should be used.

Resolution
Specifies the dots per inch (dpi) that will be used. Some printers allow for example 300, 600 or 1200 dpi.

Direct Thermal
Select Yes for Direct Thermal Printing or Select No for Thermal Transfer printing.

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Options

Pass Through	Download Fonts	Flip Format	Reverse Image
Mirror Image	Job Separator	Pause Option	Create Replace File
Void and Reprint	Image Bands		

Pass Through
Enter the data that should be sent to the printer before sending the format. The data contained within <...> like <ESC>is treated as special unprintable characters.

Download Fonts
Select Yes to download TrueType text fields as fonts. If using TrueType fonts that require certain spacing characteristics, such as Thai, Chinese, or Japanese characters, Select No to print text fields as graphics. The Download Fonts option will vary depending on the printer used.

Flip Format
Select Yes to flip the format 180 degrees. Enter N not to flip the format.

For example, if the label can be read while the label is printing, changing Flip Format to Yes will cause the label to print upside down.

Reverse Image
The format can be printed normal (black print on white background) or reverse (white print on black background). Selecting this option will print the entire format in reverse image.

Mirror Image
Select Yes for Mirror Image if you would like all fields on the format to be printed in mirror mode. Select No to print all fields as normal.

This screen item appears based on the printer chosen.

Job Separator
Enter the number of blank labels or label rows to feed between jobs.

Pause Option
You may define pauses in the print cycle with this option. This will allow you to tear off labels as needed.

Create Replace File
A Replace File is an ASCII text file that contains instructions that will load a format into the printer's memory and temporarily replace field values with new data on a format that was previously loaded on the memory card. This is

available only on cab A Series, cab M Series, cab Mach, Apollo and Tharo H and V series printers.

Selecting Yes for this option will automatically create the ASCII Replace file for the label when it is selected for download. The Replace file will be a template for use on SAP, UNIX, AS/400 or PC based systems. The .rpl file will be saved in the same directory as the label format.

Void and Reprint

This option is relevant only for the RJS printer. The RJS printer is designed to verify up to 15 bar codes as they are printed. The printer will verify bar codes in orientations 1 and 3, Picket Fence only. Bar codes in orientations 2 and 4, Step Ladder, will not verify.

The Void and Reprint option will enable or disable bar code verification. This option appears on the Format Specification Screen. Select Yes to enable verification and No to disable it.

If Yes is chosen, any labels with invalid bar codes will have a checkerboard pattern printed over the invalid bar code. The printer will then try to reprint the label up to 3 times. If more than 3 invalid labels are printed, the printer will lock up and must be reset by turning the printer off and then on again or by pressing the Red Reset button located inside the printer.

Imaging Bands

Used for Intermec printers. The print speed and image bands determine the rate at which the printer processes the images of your labels. In the printer, label printing and image processing occur simultaneously. For this reason, it is very important that these settings be synchronized. If the Image Band command is too low, the imaging process is unable to keep up with the print speed. In this case, the printer stops printing and starts again at the lowest print speed. If the Image Band command is set too high, the printer spends too much time imaging, which slows down label production.

To optimize the number of image bands for your print speed, set the image bands at the lowest number and then print a label at the desired speed. If the label prints, the Image Band setting is correctly optimized.

To optimize the number of image bands for batch printing, you must select enough image memory to allow the printer to retain the entire label image PLUS ONE INCH (one image band is equal to 1 inch). Therefore, if the printed image stops at a distance of 4 inches from the beginning of the label, you must select five image bands to prevent re-imaging.

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Page Layout

Gaps Between Labels	Print Area Height	Print Area Width	Number Across
Vertical Separation	Horizontal Separation	Left Margin	Top Margin
	Set Background Color	Format Background	

Gaps Between Labels
The type of label stock in the printer. Select Yes if you are using media with gaps. Select No if you are using continuous media with no gaps.

Print Area Height
The height of the actual printable area on the format in inches and hundredths of inches, or in millimeters, if the ruler is set to millimeters

Print Area Width
The width of the actual printable area on the format in inches and hundredths of inches, or in millimeters, if the ruler is set to millimeters.

Number Across
Indicates the number of labels across the web/page width.

Vertical Separation
Enter the vertical distance between the top of one format and the top of the next format in inches and hundredths of inches. This value must be at least 1/10th of an inch (.10) greater than the Print Area Height.

Horizontal Separation
The distance from the left edge of the first format to the left edge of the next format.

Left Margin
Enter the horizontal offset of the print image area from the left edge of the paper in inches and hundredths of inches

Top Margin
Enter the distance from the top of the paper to the beginning print position in hundredths of inches or tenths of millimeters.

Set Background Color
Select 'Yes' if you wish to set a label background color and then select the color you wish to use in the 'Format Background' prompt below. This option only appears for Windows printer drivers.

Format Background
Select a color to be used as the color for the label background. When printing the label, the background of the label will be printed this color. This option only appears for Windows printer drivers.

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Cutter

Cut Options	Cut Offset

Cut Options

You may define where in a print cycle the cutter actuates, allowing you to cut after each format, each batch, each job, or Double cut each format.

Cut Offset

Enter the distance from the point at which the label stops printing and the point at which the label is to be cut in inches or millimeters.

This value should be approximately .06". To make TWO cuts per label, enter two offsets separated by a comma. For example, to cut a reflective marking out of a label, the first offset should be approximately .06" and the second offset should the amount of space between the end of the first label and the start of the second label.

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Page Header

Page Header	Source of Data	Data	Operator Prompt Line
Prompt Number	Maximum Field Length	Decimal Places	Calculation
Database System	Database File	Connection String	Table Name
Search Fields	Trim Trailing Blanks	Page Breaks	

Page Header
Indicates where the page header will print. The selections are None, Top, or Side

Source of Data
Indicates the source of data for the page header.

Data
The data to be used for the page header when the source of data is fixed.

Operator Prompt Line
Define the prompt you wish to appear at the time of printing. The prompt will be displayed above the data entry area for the field.

Prompt Number
The numerical position that the page header will appear in relation to all other operator prompted fields. Used only when the page header has a source of data of when printed.

Maximum Field Length
The maximum number of characters allowed for the page header when the source of data is when printed.

Decimal Places
The number of decimal places to be used in a page header when the source of data is arithmetic.

Calculation
The calculation to be used for the page header when the source of data is arithmetic.

Database System
Enter the name of the Database System to use for accessing a database file. You can choose 'the software's (non-SQL) database' to connect to an internal dBase database or choose 'Other Database System' to retrieve data from other types of database files.

Database File
If the field is defined as being from 'the software's (non-SQL) database', then the name of that database must be entered. A list of the currently available databases will be displayed in the dialog box. If you have previously entered a database name, you can use the same name by pressing TAB.

Connection String
To connect to other types of database files, enter the appropriate connection string to the data source here or you can click the 'Prompt' button to be prompted to create the connection string. This string is created by first choosing a Database provider and then creating or choosing a connection to the database. How this is done will depend on your Database Provider.

Table Name

Enter the name of the TABLE containing the data to be printed. This item allows you to select the appropriate database file table.

Search Fields
The number of fields used to search for a specific record.

Trim Trailing Blanks
Used to suppress trailing blanks in an extracted database field.

Page Breaks
Includes page breaks in the page header.

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Creating

Label Setup

See Format Specifications for information on defining the properties of your format.

Creating Formats

To convert formats created under older versions that used the file extension .lbf, see Converting Formats.

To create a new format, click on the **New** icon or select **File | New | Label Format** from the menu bar.

Enter a filename for the format. Long filenames are supported therefore, they can be up to 255 characters long. Click **Add.**

Next, enter all information into the parameters screen. See Label Setup.

At this point, you are presented with a blank area on the screen called the format display area. You are now ready to begin adding fields. A field is one of the pieces that make up the format. A field can be any one of the following: text in many sizes, bar codes in a variety of symbologies with or without human readable interpretation, lines, boxes, circles and custom pictures or logos.

Each field is defined one at a time and positioned on the format display screen. Each field can be moved, erased, changed or copied at any time while building your format.

One of the powerful features of the software is the ability to define variable (when printed) or operator-entry fields. This means that the field's data is typed in at the time that the format is printed. The operator is given the ability to compose a short prompt to be used when the data is requested prior to printing. You may also extract a field's data from a database containing stored information. In this case, the database will be searched for the desired record. All fields that use this information will be filled with the proper data.

When the format has been completed, the format should be saved. The Save function stores the format.

When invoked, the software also has the ability to store a record of each set of formats printed along with the date and time it was printed and any data on the format. This data is stored in a report (.RPT) file.

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Moving on the Format

To move the pointer you can click on the field, holding down the left mouse button and drag the field to the desired position, or you can use the arrow keys or the HOME and END keys. Each arrow key moves the pointer in the direction indicated by the arrow printed on the key. Each keystroke represents a movement of .01 inches or .1mm. To make larger movements, hold the SHIFT key down while using the arrow keys. This will cause each keystroke to move the pointer .10 inches or 1.0mm.

The HOME key will move the pointer to the upper left corner of the format display area and the END key will move to the lower right corner.

The coordinates of the pointer are shown on the lower right side of the format display screen. The horizontal or X coordinate shows the distance from the left edge of the format print area. The vertical or Y coordinate shows the distance from the top edge of the format print area.

Maximum Fields on a Format

The maximum number of fields per format is usually more than 100, or the number of characters allowed in your printer's buffer, whichever comes first. This number will vary depending on the printer of choice, the number of printers attached and the amount of memory available in your PC.

The Silver level of software has a limit of 25 fields on a format, regardless of the printer's buffer or PC memory.

Erasing a Format

To erase a format, select File | Erase. Locate the file that you wish to erase, highlight it and click Erase. A warning will be displayed asking whether or not you want to erase the file. Select the appropriate choice.

NOTE: Files that are erased through the software by using the above procedure DO NOT get sent to the Windows Recycle Bin. If you select to erase them, they are permanently erased!

Viewing/Changing Format Size

To view or change the format size specifications, click the Format Specification icon or choose **View | Change Format Specifications** from the menu bar. You may also right mouse click on any part of the format background and choose Change Format Specification from the shortcut menu.

This selection allows you to review the specifications for a format. The format size specification data will be available on the tab labeled Page Layout.

When you have made the desired changes and have chosen to make the changes effective, by selecting the OK button, the screen will return to the format display.

When the format is redisplayed, if the display area has been decreased, any fields that do not fit due to the size change, are erased.

Adding a New field

To add a new field to the format, click on the field icon located on the toolbar or choose **Insert** from the menu bar.

There are 9 types of fields you may choose to add: Wizard (EAN/UCC128), Bar Code, Multi-Source Bar Code, Text or Paragraph, Multi-Source Text, Line, Box, Circle or Ellipse, or Picture.

Field names will automatically be generated for Text, Bar Code and Picture fields. For example, TEXT1, BAR1, and PICT1. Field names can be customized by simply typing over the default name. This feature can be disabled in the Format Specifications menu by choosing 'No' for Auto Field Name.

Create a Bar Code Using the Wizard

To add a new EAN/UCC 128 bar code field using the Wizard, select **'EAN/UCC 128 Wizard'** from the **Create Barcode Using Wizard** icon's drop down list on the

Drawing toolbar or choose **Insert | Bar Code Wizard --> EAN/UCC 128** from the menu bar.

EAN/UCC 128 Wizard

The EAN/UCC 128 Wizard will prompt you for the required information and then builds the bar code automatically! Creating EAN/UCC 128s a simple 4-step process.

1. Begin by clicking the 'Add' button to add an Application Identifier (AI).
2. Select the Application Identifier from the list provided. Click 'Next'. If the Application Identifier requires a check digit, you will be asked if the check digit should be computed or if it is part of the data. Click 'Next'
3. Provide a source of data for that AI. Click 'Next'
4. If your application only requires one Application Identifier *, click 'Finish'. You can review the other field specification or click 'OK' and you are done!

*If you require multiple Application Identifiers, simply click 'Next' to work through the steps 1-3 again until you have added all of the required Application Identifiers.

Adding a Bar Code Field

Adding a Bar Code Field	Horizontal Position	Vertical Position	Field Name
Comment	Symbology	Subset	Control and Function Characters
UPS GroundTrac	Check Digit	Height Multiplier	Row Size
Error Security Level	Truncate Symbol	Interpretation	Bar Code Height
Added Characters	Bar Code Ratio	Bar Width Multiplier	Field Direction
Source of Data	Center Data	Report Data	Increment/Decrement Field
Type of Increment/Decrement	Increment/Decrement Sequence	Change Amount	Update Database
Add-On Characters	Leading Characters	Trailing Characters	Enable Printing
Print Criterion	Bar Code Width Magnification	Random Weight Check Digit	

Increment/Decrement Maximum	Increment/Decrement Minimum		

Adding a Bar Code Field

To add a new bar code field, click on the **Add Barcode Field** icon located on the Drawing toolbar or choose **Insert | Bar Code Field** from the menu bar.

You will now be presented with the Create Bar Code screen. Click on entering specification data for details.

Once you have entered all items correctly, the format display screen will again be shown with the box representing the area for the bar code. You should now position the bar code field.

The available bar code symbologies are listed here. Bar code symbology selections vary by printer.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the vertical position of the field.

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter a comment for this field.

Symbology

The available bar code symbologies are specific to the printer being used.

NOTE on Composite Bar Codes: Use a pipe symbol '|' to separate the linear data from the 2D data when creating Composite Bar Codes in the Software

Subset

When using a Code 128 bar code you will be able to choose which Subset to use for the symbol. Selecting *Automatic* will let the software choose a Subset to create the shortest symbol. When it is required, you may also select a specific Subset to force the symbol to stay in that Subset (Subset A, Subset B, or Subset C)

Control and Function Characters

The software allows you to embed control codes or function codes into a bar code when permitted by the symbology. For example Code 128 or PDF417.

A pop-up menu enables easy selection of the correct code. To insert control codes click on the 'Control Characters' button and select the desired code from the pop-up list. Control codes are displayed in the user interface as the control code name surrounded by angle brackets "<>". For example, inserting a carriage-return in a field is displayed as <CR>.

You may also use the following character sequences to specify control codes:

\xHH

Where:

\x specifies the beginning of a hexadecimal string;

HH represents a 2 digit hexadecimal value.

For example, if a Code 128 or PDF417 bar code requires character data with an embedded carriage return, type \x0D at the end of your data. The 0D at the end of the character string is the hexadecimal value for a carriage return. See the table of hexadecimal values.

For those users that require embedded function characters, the software allows you to embed the function characters as follows:

\&FN1 **Function 1**

\&FN2 **Function 2**

\&FN3 **Function 3**

\&FN4 **Function 4**

UPS GroundTrac

When creating a UPS GroundTrac symbology, you can choose to print the bar code with or without the Human Readable interpretation. If selected, the

interpretation will automatically be formatted to the correct specification based on the printer chosen. When printing to the Apollo, the human readable interpretation will need to be created as a special formatted text field to comply with the UPS Bar Code Specifications. For additional information, please refer to UPS Bar Code specifications.

Check Digit

Select an optional check digit for the chosen symbology. This option appears for certain symbologies only.

Height Multiplier

Calculates the height of the symbology. Available for certain symbologies only.

Row Size

Enter the number of data code words in each row. Each code word represents about 2 characters.

Error Security Level

Enter a number for the level of security desired. Zero (0) provide error detection only. Higher numbers increase the symbol size and error correction capability.

Truncate Symbol

Select Yes to omit the right hand row indicators and stop pattern. Select No to print the full symbol.

Interpretation

The interpretation refers to the human readable characters printed either below a horizontal bar code or to the side of a vertical bar code. One of several Human Readable Interpretations is available to you depending on your choice of symbology and field direction. Typically, human readable interpretation is not available for 2D codes.

NOTE: Whenever symbology or field direction is changed, this item must be changed or it will return to its default value.

Bar Code Height

The height of the bars that make up the bar code. This can have a value from .1 inches to 3.9 inches or .1mm to 100mm.

Added Characters

Following is a list of the additional options available when choosing Code 128 B or Code 128 C:

- No Additional Characters
- Function 1 + Mod 43 Check Digit
- Function 1 + Mod 10 Check Digit
- Function 1 Only
- Mod 43 Only
- Mod 10 Only

Bar Code Ratio

This is the ratio of the wide to narrow elements of a bar code.

Bar Width Multiplier

The number of dots used to define the narrow element of a bar code. This allows you to establish the density of your bar code.

Field Direction

The bar code can be printed in one of 4 directions:

- Left to right across the format
- From bottom to top of format
- Right to left (upside down) across the format
- From top to bottom of format

Source of Data

The data for the field can be one of the following:

- FIXED
- WHEN PRINTED
- COPIED
- SERIALIZED
- LINK
- DATABASE

Center Data

This option will cause the bar code to be centered within the defined print area. That is, if the contents of the field contain fewer characters than the maximum, the bar code will be moved so it is centered within the field's area.

Report Data

To record the value of this field whenever the format is printed, select Yes. Otherwise, select No.

The data in this field will be stored each time the format is printed. If no fields are specified with this option, no format tracking data file will be created.

Increment/Decrement Field

The following options are available:

- Increment
- Decrement
- Constant

If the field is copied, the increment or decrement specified for the copy field will apply to the copied field. If the field contains more than 10 numbers, the increment or decrement will apply only to the last 10 numbers. If the field is linked, the increment or decrement specified for the source field will apply to the link field.

Type of Increment/Decrement

The choices for increment/decrement are as follows:

- Numeric
- Alphabetic
- Alphanumeric
- Hexadecimal
- Octal
- Custom

NOTE: Increment or decrement starts from the right side of the field value and increments or decrements toward the left.

Increment/Decrement Sequence

The custom incrementation option allows you to define a specific sequence of characters to increment or decrement. Valid characters are the digits 0-9 and the letters A-Z.

See Examples

NOTE: Incrementing or Decrementing starts from the right side of the field value and increments or decrements toward the left.

Change Amount

The numerical amount by which to increment or decrement the field.

Update Database

Select Yes to have the database updated after each job. This will reflect the last value of the incremented/decremented field. Select No to leave the database field unchanged.

Increment/Decrement Maximum

Enter the maximum value the field can reach before rolling over to the minimum value. NOTE: This option requires the computer to do the field incrementation and not the printer. The computer will send the labels one at a time to the printer.

Increment/Decrement Minimum

Enter the value the field should be reset to after reaching the maximum value. NOTE: This option requires the computer to do the field incrementation and not the printer. The computer will send the labels one at a time to the printer.

Add-on Characters

You may specify a character string of up to 10 characters to always be appended to the front and/or end of the bar code. These characters will always be encoded in the bar code. The following options are available:

- None
- Header
- Trailer
- BOTH Header and Trailer

Leading Characters

If you choose to attach header characters to the bar code, enter the constant string of characters for the header.

Trailing Characters

If you choose to attach trailer characters to the bar code, enter the constant string of characters for the trailer.

Enable Printing

This selection will allow you to define a field from any of the available sources of data and not have that field printed on the format.

For example: If you want your customer's part number to be printed on the format, but you do not want your part number printed on the format but you do want it included in the report that is generated. You will need to generate a field defining your part number, disable the printing of the field and enable the report data function.

You could also use this function to put a message on the screen for your operator. Such as, the color or size stock that this format should be printed on.

Enter Y to print the field on the format. Enter N to display the field on the format, but do not print the field. Enter C to specify a print criterion for the field.

See Appearance to learn how to change the color of non-printing fields.

Print Criterion

Enter the condition for which this field should be printed. The condition entered is an expression that can contain currently defined field names, numeric or alphabetic constants, mathematic operators, comparison operators or logical operators. Numeric or alphabetic constants need to be enclosed in double quotes (").

For example, you can create a text field that has a fixed value of 'SALE'. You only want this field to print when the 'PRICE' field is less than 6.99. You can select Conditional Print for the field named 'SALE' and type the following expression in for Print Criterion: **PRICE < 6.99.** Where: **PRICE** is the field name you want to compare. < is the comparison operator LESS THAN and 6.99 is the value to match. The 'SALE' field will now only print when the value of the PRICE field is less than 6.99.

Another example would be a text field with a fixed value of "Frozen". You only want this field to print when another field called 'CONDITION' is equal to "True". Type **CONDITION = "True"** in for Print Criterion. Any time the CONDITION field is equal to "True" the "Frozen" field will print. If CONDITION is empty or equal to something other than "True" then "Frozen" will NOT print.

The **LIKE** comparison operator allows you to perform pattern matching. You can substitute a percent (%) or an underscore (_) character for a whole word, a group of characters or a single character. A percent sign (%) represents a whole word or any GROUP of characters in the data. The underscore (_) represents any SINGLE character in the data.

See Examples

Bar Code Width Magnification

Allows you to enter a value in the range of 1-99 to magnify the narrow and wide bar sizes. This option is only available for Datamax I-Class and W-Class printers.

Random Weight Check Digit

Select Yes to enable the random weight check digit. Please note that when selecting Yes, your screen image will not match your printed output. This option applies to UPC/EAN and is available for the Apollo/A Series printers only.

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Adding a Multi-Source Bar Code Field

Adding a Multi-Source Bar Code Field	Field Properties Button	OK Button
Cancel Button	Field Data Segments	Literal Strings/Existing Fields
	Existing Data Segments	

Adding a Multi-Source Bar Code Field

To add a new Multi-Source Bar Code Field, click on the **Add Multi-Source Bar Code Field** icon located on the Drawing toolbar or choose **Insert | Multi-Source Bar Code Field** from the menu bar.

Field Properties Button

Clicking the 'Field Properties' button will allow you to modify the properties of the final bar code (excluding source of data). Please see Adding a Bar Code Field for details.

NOTE: You must have at least one segment defined in the field before you are able to change any of the field properties.

OK Button

Clicking the '**OK**' Button will create the Multi-Source Bar Code Field.

Cancel Button

Clicking the '**Cancel**' button will cancel the creation of the Multi-Source Bar Code Field.

Field Data Segments
This list shows all of the data segments that will be part of the completed Bar Code Field. The data segments will be listed in the order that they will appear in the bar code. You can change this order by selecting a segment and clicking either the '**Move Up**' or '**Move Down**' buttons. You can remove any of the segments by highlighting it and clicking the '**Remove**' button.

Literal Strings/Existing Fields
From this list you may add the data from any of the predefined text or bar code fields on the format as a data segment for this field. You can also add a literal string enclosed in double quotes (" "). For example "sample string".
To add the string or field value to the bar code click the '**Include**' button

Existing Data Segments
This list shows all predefined Data Segments that are currently on the format that you may use as part of the bar code.

If there are no Data Segments listed, you can create one by clicking the '**Add**' button. You may edit a Data Segment already on the format by clicking the '**Edit**' button. You may also delete one from the format by clicking the '**Delete**' button.

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Adding a Text or Paragraph Field

Adding a Text or Paragraph Field	Horizontal Position	Vertical Position	Field Name
Comment	Typeface	Width Magnification	Height Magnification
Character Height	Character Width	Maximum Lines	Field Contrast
Field Direction	Source of Data	Special Formatting	Report Data
Increment/Decrement Field	Add-on Characters	Enable Printing	Font Style
Font Size	Date Format	Format String	Non-Numeric Data
Text Color	Position Per Line	Interline Spacing	Reverse Field Adjustment
Letter Orientation	Character Spacing	Character Formatting	Special Effect Character
Center/Justify	Type of Increment	Increment/Decrement Sequence	Data Checking
Change Amount	Background Color	Print Criterion	Selection List

Update Database	Design/Test Value	Script	Maximum Field Length
Field Fill	Force Fit	Font Point Size	
Increment/Decrement Maximum	Increment/Decrement Minimum		

Adding a Text or Paragraph Field

To add a new text or paragraph field to the format, click the **Add Text Field** icon on the Drawing Toolbar or choose **Insert | Text Field** from the menu bar.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the vertical position of the field.

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter a comment for the field.

Typeface

You will be presented with an on-screen list of available character sets from which to choose the base character for your text field. A thumbnail preview will be given for all TrueType fonts on the Text field parameters screen while editing this prompt. If the source of data is fixed, the data will be shown on the parameters screen in the True Type font selected. For when printed fields, the data will be shown in the True Type font selected at print time when it is entered.

NOTE: When defining a text field that uses a TrueType font, the Character Height is the actual cell size of a character. The cell size is defined to include the character, international ascenders and lower case descenders.

For example: If you type a Character Height of 1.00", the actual character size that is printed will be .70". Specifying a Character Height of 1.33" will print a character of 1" in height.

Width Magnification

This function is used to specify the width of the characters.

Height Magnification

This function is used to specify the height of the characters

Script

Select the Script/Character Set to be used with the chosen font.

Font Point Size

When using True Type fonts you may click the "Change Font Point Size" Button and select a point size for the text field. The Character Height is adjusted automatically and the Character Width is set to "0" to make it proportional to the height. Conversely, if the value for Character Height is changed then the value for Font Point Size will be automatically adjusted.

Character Height

Indicate the character height in inches and hundredths of inches if measurements are in English. Indicate the character height in millimeters and tenths of millimeters if measurements are in Metric.

Character Width

Indicate the character width in inches and hundredths of inches if measurements are in English. Indicate the character width in millimeters and tenths of millimeters if measurements are in Metric.

When using TrueType fonts, you may specify a character width of "0". This will make the width proportional to the height.

Maximum Lines

This function allows you to specify a single line text field or a multiple line text (paragraph) field. Enter 1 for a single line. For a paragraph field, enter the number of lines you want the paragraph to occupy. A maximum of 99 lines can be specified for a paragraph field.

Field Contrast

- Normal - Field will appear black on white background.
- Reverse - Field will appear white on black background

Field Direction

When the Letter Orientation is Normal, the field can be printed in any of the following orientations on the format.

- Normal (left to right)
- Bottom to top
- Upside down (right to left)
- Top to bottom
- Slanted
- Circular Arc

When the Letter Orientation is Stacked, the field can be printed in any of the following stacked orientations:

- Stacked Right
- Stacked Up
- Stacked Left
- Stacked Down
- Slanted

Stacked fields are fields where characters are printed below one another instead of next to one another. This option varies depending on the printer chosen.

The software shows an example of each orientation in the box of the display when this item is being entered.

You should now rotate the box to the appropriate angle. As you move the box, the degree of the slant appears in the coordinates box on the lower right side of the screen. When you have successfully placed and sized the area for the circular arc field, release the mouse button or press ENTER.

When selecting a field direction of Circular Arc, the field is placed on the label then expanded in an arc. Once all specification data is entered, you will be returned to Edit screen. You will be instructed to define the location, angle and the shape of the arc of the field.

You should now rotate the box to the appropriate angle. As you move the box, the degree of the slant appears in the coordinates box on the lower right side of the screen.

You will now be prompted to define the shape of the arc of the field.

Adjust SHAPE. Use arrows, then ENTER or drag with mouse.

Moving the pointer towards the top of screen will make the top of the letters curve more.

Moving the pointer towards the bottom of the screen will make the bottom of the letter curve more. When you have successfully placed and sized the area for the circular arc field, release the mouse button or press ENTER.

Source of Data

The data for the field can be one of the following:

Fixed	Link	Arithmetic
When Printed	Serialized	External File
Database	Print Date	Name When Printed
Copied	Time	Database Indirect

Special Formatting

This function allows for specialized formatting of data. Following are the available options:

- No special formatting
- Short Date

  Short Date
  Example: 10-JAN-99

- Long Date

  Long Date

  Example: January 10, 1999

- Julian Date

  Julian Date

  Example: 99010

- Custom Date

  Custom Date

Allows you to create your own custom format for the date.

MM - Numeric Month

mm - Numeric Month with suppressed zero

MMM - Abbreviated Name of Month

MMMMMMMMM - Month Name

DD - 2 Digit Day of Month

DDD - 3 Digit Day of Year

YY - 2 Digit Year

Y - 1 Digit Year

WW - 2 Digit Week Number within Year

WWW - 3 Letter Day of Week

WWWWWWWWW - Day of Week Name

NOTE: Use mmm for jan or Mmm for Jan, etc.

Example: MM.DD.YY

- Custom Spacing

Custom Spacing

This option allows for compliance with various industry standard formats for bar code human readable interpretations. You may use a character string of 9's to represent positions to be filled by data. The allowable separators are any special characters you desire for your format, including spaces.

Example: (999) 999-9999 for a phone number, demonstrating that separators other than the space character can be used (i.e. dash, parentheses).

This meets the needs of different standards such as NDC, which requires dashes and spaces, or UCC/EAN 128, which requires parentheses and spaces.

- Custom Numeric/Amount Format

  Custom Numeric Amount Format

  This option allows you to format a string of numeric data. If you would like to suppress the printing of leading zeroes or only print specific parts of the numeric data, such as the first 3 digits, you can use a character string of 9's, X's or Z's to represent positions to be filled by data.

  Example: ZZZ9 represents a numeric data string with suppressed leading zeroes.

- RPS Interpretation with Checksum

  RPS Interpretation with Checksum

  This option allows you to create the Human Readable interpretation for an RPS bar code.

  To properly create an RPS bar code with interpretation, refer to your RPS Bar Code Specifications.

- Price (.NN or N.NN)

  Price (.NN or N.NN)

  If selected, the fixed data will be printed in this format.

  Displayed is a price with decimal points, but no currency sign(s).

- Price (NN¢ or N.NN)

  Price (NN¢ or N.NN)

  If selected, the fixed data will be printed in this format.

  No decimal point for fixed data of 2 characters or less.

- Price (.NN¢ or $N.NN)

  Price (.NN¢ or $N.NN)

  If selected, the fixed data will be printed in this format.

  Displayed with decimal points and currency signs.

- Price ($.NN or $N.NN)

  Price ($.NN or $N.NN)

  If selected, the fixed data will be printed in this format.

  Displayed with decimal points and

  the dollar sign.

- Unit Price (NN.N¢ or $N.NN)

  Unit Price (NN.N¢ or $N.NN)

  If selected, the fixed data will be printed in this format.

  Displayed is a unit price.

- Price Header (N/ if N > 1)

  Price Header (N/ if N > 1)

  If selected, the fixed data will be printed in this format.

  For example:

  If items sell 3 for 2.00, choosing this option will allow the price to be printed as 3/2.00.

- Price Header (N FOR if N > 1)

Price Header (N FOR if N > 1)

If selected, the fixed data will be printed in this format.

For example:

If items sell 3 for 2.00, choosing this option will allow the price to be printed as 3 FOR 2.00.

Report Data

To record the value of this field whenever the format is printed, select Yes. Otherwise, Select No.

The data in this field will be stored each time the format is printed. If no fields are specified with this option, no format tracking data file will be created.

Add-On Characters

You may specify a character string of up to 10 characters to always be appended to the front and/or end of the bar code. These characters will always be encoded in the bar code. The following options are available:

- None
- Header
- Trailer
- BOTH Header and Trailer

Enable Printing

This selection will allow you to define a field from any of the available sources of data and not have that field printed on the format.

Example: Your customer's part number gets printed on the format, but yours does not; however you want your part number included in the report that is generated. You need to generate a field defining your part number, disable the printing and enable the report function.

You could also use this function to put a message on the screen for your operator. Such as, the color or size stock that this format should be printed on.

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Font Style

You will be presented with an on-screen list of available font styles for the chosen typeface.

Font Size

You will be presented with an on-screen list of available font sizes for the chosen typeface.

Date Format

A special string of characters that will represent how the date should be formatted. The valid characters for the string appear in the Directions Box.

Format String

A character string in which 9's represent how the data should be formatted. Other valid characters for the string include, parenthesis, periods, commas, hyphens and the space character.

If you had previously selected Custom Numeric/Amount for your Special Formatting option, you can type in a sequence of 9's, X's or Z's to represent positions (or place holders) to be filled by data.

The 9 place holder should be used to always print a digit. For example, if the data is:

000123456

and you want to print all digits, enter the following for the *Format String* screen item:

999999999

The data that will print will be:

000123456

The **Z** place holder should be used if you want to suppress a variable number of leading zeroes. In other words, if the digit is a leading zero, the zero will not print. If the digit is not a zero, the digit will print.

Fixed Data: For example, if the data is:

000123456

and you want to suppress the 3 leading zeroes, enter the following for the *Format String* screen item:

ZZZ999999

The data that will print will be:

123456

This example will suppress only the first three leading zeroes. If there are more than three leading zeroes in the data stream, only the first three leading zeroes will be suppressed.

Variable Data: When the data is unknown, such as database input or operator input, and you want to suppress all leading zeroes, it is best to enter the following for the *Format String* screen item:

ZZZZZZZZ9

Entering the format string this way will always suppress the leading zeroes no matter what the actual data is.

For example, if the data is:

000123456

The following will print:

123456

If the data is:

000000123

The following will print:

123

The **X** place holder should be used to always suppress a digit in a specific position. For example, if the data is:

123400056

and you want to print only the last six digits, enter the following for the *Format String* screen item:

XXX999999

The data that will print will be:

400056

The number of place holder characters specified for *Format String* must match the number of characters in the data string:

a) If data is coming from a database or if the data is When Printed and the maximum field length is 10, there should be 10 characters specified in the *Format String:*

ZZZZZZZZZ9

will suppress any leading zeroes.

For example, if the data is:

0000007890

The characters following will print:

7890

If the data is:

0034567890

The characters following will print:

34567890

Non-Numeric Data

If there are any non-numeric characters in the data, the non-numeric characters will automatically be ignored. For example, if the data is 01234B6,

typing: ZZZZZZ9

will suppress any leading zeroes; however, since there are non-numeric characters, the actual data that will print will be 12346.

Text Color

Choose a color for the text field. For TrueType fonts, you may click the "Custom" button to create a custom color for the text field. Printer internal fonts will only allow a choice of 16 colors. This option will only appear for the TEC 416 printer or color Windows printers.

Positions Per Line

This function allows you to define the number of characters each line will have (maximum of 300 character positions).

NOTE: If the paragraph data is larger than the area that you defined on the format, and all characters cannot fit, the following message will be displayed: **WARNING**: Paragraph data exceeds the defined number of lines and positions per line. Some data will be omitted.

Interline Spacing

This function allows you to define the distance between each line, in inches and hundredths of inches. Enter 0 for default spacing.

Reverse Field Adjustment

This option is used to set the size of the reverse area surrounding the field. Enter a value in hundredths of an inch to define the size of the reverse box that surrounds the text.

This option is only available when using a Windows Printer Driver.

Letter Orientation

Choose the orientation of the characters in relation to the direction of the text. All letters in the field can be printed in a Normal or a Stacked orientation. The Stacked orientation only appears if the chosen typeface is a TrueType font.

Character Spacing

Enter the vertical distance between characters, from the baseline of the first character to the baseline of the next character, in inches. Enter 0 for default spacing.

The Character Spacing option is only available if the chosen typeface is a TrueType font and the letter orientation is Stacked.

Character Formatting

If you want to specially format parts of the text field, select one or more alternate styles. Enter blank for no special formatting of characters.

The purpose of Character Formatting is to apply special effects to text within a paragraph. Special effects include **bold**, *italic*, underline , superscript and subscript. You have the ability to select a single special effect or multiple effects (up to 4). For each special effect selected, you are given an additional screen item prompt.

The Character Formatting screen item appears on the text specification screen when designing paragraph fields in which the chosen typeface is a TrueType font.

Special Effect Character

Enter a toggle character for the special effect. The toggle character will become a non-printing character which can be used to bracket words or phrases that you want to appear in the special effect style.

For example, to highlight a word to be underlined, you can use the ! (exclamation point) as the toggle character. After the toggle character is defined, the ! (exclamation point) character can be placed before and after the word or phrase that you want underlined.

The special effect toggle character can also be embedded in an external file or a database memo field. For When Printed paragraph fields, the toggle character can be used when entering data on the prompt line.

Center/Justify

This option will cause the character string to be centered within the defined print area. That is, if the contents of the field contain less characters than the maximum, the characters will be moved so they are centered in the field's area. Other options available are: Right Justify, Left Justify and Full Justify. Full Justify will adjust the spacing between words so that text aligns with both the left and right margins. Options may vary based on the printer used.

Increment/Decrement Field

The following options are available:

- Increment
- Decrement
- Constant

If the field is Copied, the increment or decrement specified for the copy field will apply to the copied field. If the field contains more than 10 numbers, the increment or decrement will apply only to the last 10 numbers.

Increment/Decrement Sequence

The custom incrementation option allows you to define a specific sequence of characters to increment or decrement. Valid characters are the digits 0-9 and the letters A-Z.

See Examples

NOTE: Incrementing or Decrementing starts from the right side of the field value and increments or decrements toward the left.

Type of Increment

The type of incrementation to be done on the field. Either Numeric, Alphabetic, Alphanumeric, Hexadecimal, Octal, or Custom.

Change Amount

The numerical amount by which to increment or decrement the field.

Increment/Decrement Maximum

Enter the maximum value the field can reach before rolling over to the minimum value.

NOTE: This option requires the computer to do the field incrementation and not the printer. The computer will send the labels one at a time to the printer.

Increment/Decrement Minimum

Enter the value the field should be reset to after reaching the maximum value.

NOTE: This option requires the computer to do the field incrementation and not the printer. The computer will send the labels one at a time to the printer.

Update Database

Select Yes to have the database updated after each job. This will reflect the last value of the incremented/decremented field. Select No to leave the database field unchanged.

Background Color

Select the background color for the text field. This option will only appear for the TEC 416 printer or color Windows printers.

Data Checking

Please indicate whether data type validation should be performed on operator input. Choices are:

- No Validation
- Numeric
- Alphabetic
- Alphanumeric
- Date (M/D/Y)
- Upper Case Characters
- Upper Case Alphabetic
- Upper Case Alphanumeric
- Fixed List of Values

Selection List

Enter a list of values which the operator can choose from. The values that you type in will appear as choices on the Print screen. Each value must be separated by a space. Short phrases must be enclosed in double quotes. To advance to a new line, press CTRL+ENTER. For example, choices are RED GREEN BLUE.

To display this selection list, click on the down arrow next to the field input box on the data input screen within the Print screen.

Maximum Field Length

Enter the maximum number of characters in the field.

Design/Test Value

This option allows users to specify either a narrower character width or the default character width of a text field by typing in a string of characters that more precisely represents the actual printed data.

For this option, press TAB to leave this entry BLANK or type in a string of characters which represents a narrower character width for the field. Leaving this entry blank designates that you want to use the default screen and field width representation. Typing in a string of characters allows you to more precisely represent the actual printed data which can allow more characters to define on a line.

Field Fill

With this option set to Yes, if less characters are inputted than specified for the maximum field length, the characters will be bigger in both height and width. Select No for normal operation.

Force Fit

When designing paragraph or Multi-source (block) text fields, you can enable the "Force Fit" option. This option will allow the font size to shrink or grow so that the text best fills the available field area. Once this option is enabled, you will be prompted to enter the upper and lower limits for the text height. The upper limit is determined by the value entered in the "Max. Fit Height" prompt, the text will grow no larger than this value. The lower limit is determined by the value entered in the "Min. Fit Height" prompt, the text will not shrink smaller than this value. The width of the characters is changed proportionally to the change in height. This option is useful when designing ingredient labels to make the best use of the available label space.

Print Criterion

Enter the condition for which this field should be printed. The condition entered is an expression that can contain currently defined field names, numeric or alphabetic constants, mathematic operators, comparison operators or logical operators. Numeric or alphabetic constants need to be enclosed in double quotes.

For example, you can create a text field that has a fixed value of 'SALE'. You only want this field to print when the 'PRICE' field is less than 6.99. You can select Conditional Print for the field named 'SALE' and type the following expression in for Print Criterion: **PRICE < 6.99.** Where: **PRICE** is the field name you want to compare. < is the comparison operator LESS THAN and 6.99 is the value to match. The 'SALE' field will now only print when the value of the PRICE field is less than 6.99.

Another example would be a text field with a fixed value of "Frozen". You only want this field to print when another field called 'CONDITION' is equal to "True". Type **CONDITION = "True"** in for Print Criterion. Any time the CONDITION field is equal to "True" the "Frozen" field will print. If CONDITION is empty or equal to something other than "True" then "Frozen" will NOT print.

The **LIKE** comparison operator allows you to perform pattern matching. You can substitute a percent or an underscore character for a whole word, a group of characters or a single character. A **%** (percent sign) represents a whole word or any GROUP of characters in the data. The _ (underscore) represents any SINGLE character in the data.

For example, if you need to print all records where the UPC code begins with the number 6 and ends with any character, type the following expression: **UPCCODE LIKE 6%**

Where:

UPCCODE is the field name in your database.

LIKE is the comparison operator LIKE.

6 is the starting character of the UPC code to match.

% designates the remaining characters in the UPC code.

The database will be searched for all records which begin with the number 6 and only those records will be printed.

If you need to print all records where an Item number begins with A and ends with a 5, type the following expression: **ITEMNUM LIKE A_5**

Where:

ITEMNUM is the field name in your database. The length of ITEMNUM is 3.

LIKE is the comparison operator LIKE.

A is the starting character of the ITEMNUM to match.

_ is a substitute for any single character.

5 is the last character of the ITEMNUM to match.

The database will be searched for all records where the ITEMNUM is 3 characters in length, begins with an A, ends with a 5 and has any character in the second position. Only those records will be printed.

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Adding a Multi-Source Text field

Adding a Multi-Source Text Field	Field Properties Button	OK Button
Cancel Button	Field Data Segments	Literal Strings/Existing Fields

	Existing Data Segments	

Adding a Multi-Source Text Field

To add a new Multi-Source Text Field to the format, click the **Add Multi-Source Text Field** icon on the Drawing Toolbar or choose **Insert | Multi-Source Text Field** from the menu bar.

Field Properties Button

Clicking the 'Field Properties' button will allow you to modify the properties of the final text field (excluding source of data). Please see Adding a Text Field for details.

NOTE: You must have at least one segment defined in the field before you are able to change any of the field properties.

OK Button

Clicking the '**OK**' Button will create the Multi-Source Text Field.

Cancel Button

Clicking the '**Cancel**' button will cancel the creation of the Multi-Source Text Field.

Field Data Segments

This list shows all of the data segments that will be part of the completed Text Field. The data segments will be listed in the order that they will appear in the text field. You can change this order by selecting a segment and clicking either the '**Move Up**' or '**Move Down**' buttons. You can remove any of the segments by highlighting it and clicking the '**Remove**' button.

Literal Strings/Existing Fields

From this list you may add the data from any of the predefined text or bar code fields on the format as a data segment for this field. You can also add a literal string enclosed in double quotes (" "). For example "sample string".
To add the string or field value to the text field click the '**Include**' button

Existing Data Segments

This list shows all predefined Data Segments that are currently on the format that you may use as part of the text field.

If there are no Data Segments listed, you can create one by clicking the '**Add**' button. You may edit a Data Segment already on the format by clicking the '**Edit**' button. You may also delete one from the format by clicking the '**Delete**' button.

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Adding a Line Field

Adding a Line Field	Field Name	Comment	Horizontal Position
Vertical Position	Enable Printing	Orientation Angle	Line Thickness
Line Length	Shape	Fill Pattern	Gray Level

Adding a Line Field

To add a line field click on the **Add Line Field** icon located on the Drawing toolbar or choose **Insert | Line Field** from the menu bar.

The line's width can be as large as the format width. The line's height can be as large as the format height.

You can now use the mouse button to move the pointer to the proper position on the format or you can use the arrow keys. Since a line is treated as though it is a rectangle, you may actually move to either the upper left corner or any of the other three corners of the area to be occupied by the line. When the pointer is properly positioned, the following message will now appear:

Move to LOWER RIGHT CORNER of the line.

Press and hold the mouse button or press ENTER when done.

You can now use the mouse button to move to the opposite corner of the area for the line or you can use the arrow keys. A solid rectangle will display the area as you use the arrow keys to expand or contract the area. When you have expanded the rectangle to the proper size, release the mouse button or press ENTER.

The completed line will be added to the format and shown on the format display.

Angled Lines are supported on some printers.

For printers that support shaded lines, you will be presented with the Create Line Field Specification screen. Each of the specification screen items are described below:

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report,

copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter a comment for this field.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the vertical position of the field.

Enable Printing

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Orientation Angle

Enter the Angle in degrees and tenths of degrees.

Line Thickness

If you would like to adjust the thickness of a line after you have already placed the line on the format, this parameter permits you to enter a value for the line thickness.

Line Length

Enter the length of the line in inches or millimeters.

Shape

You will be presented with an on-screen list of available shapes from which to choose. The available choices for line fields are:

- Solid Rectangle
- Solid Rounded Rectangle
- Arrow
- Double Arrow
- Triangle

The choices vary based on the printer chosen.

Fill Pattern

You will be presented with an on-screen list of available fill patterns from which to choose. The available choices are:

- Solid
- Down Diagonal
- Up Diagonal
- Grid
- Diamond
- Horizontal lines
- Vertical Lines
- Dots
- Windows Wallpaper

The choices vary based on the printer chosen.

Gray Level

You will be presented with an on-screen list of available gray level shading. This option appears when a **Solid fill** pattern is chosen.

The choices for gray level shading vary based on the printer chosen.

Once you have finished entering the specification data for the field, the field can be placed on the format.

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Adding a Box Field

Adding a Box	Field Name	Comment	Horizontal Position
Vertical Position	Enable Printing	Field Width	Horizontal Thickness
Vertical Thickness	Shape	Fill Pattern	Number of Sides
Gray Level	Polygons	Outlined	Field Height

Adding a Box

To add a box field, click on the **Add Box Field** icon located on the Drawing Toolbar or choose **Insert | Box Field** from the menu bar.

The following message will appear:

Press and hold the mouse button or press ENTER when done.

You should now move the pointer to the proper position on the format. You may actually move to either the upper left corner or any of the other 3 corners of the area to be occupied by the box. When the pointer is properly positioned, press ENTER.

You may now move to the opposite corner of the area for the box. A rectangle will display the area as you use the mouse button or the arrow keys to expand or contract the area. When you have expanded the rectangle to the proper size, release the mouse button or press ENTER.

Now you will be prompted to expand the box's borders to the proper thickness. The following message will appear:

ADJUST SIDES TO PROPER THICKNESS

Drag with the mouse and release button when done,

or use the arrow keys and press ENTER when done.

The left arrow will decrease vertical sides and the up arrow key will decrease horizontal sides. Pressing the arrow keys while holding down the shift key, will result in movements of .10 inches or 1.0mm.

When the box's borders are the proper thickness, press ENTER. The box will be added to the format and displayed.

For printers that support shaded boxes or polygons, you will be presented with the Create Box Field Specification screen. Each of the specification screen items are described below:

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the vertical position of the field.

Comment

Enter a comment for this field.

Shape

You will be presented with an on-screen list of available shapes from which to choose. The available choices for box fields are:

- Rectangle
- Solid Rectangle
- Rounded Rectangle
- Solid Rounded Rectangle
- Regular Polygon
- Solid Polygon

The choices vary based on the printer chosen.

Number of Sides

You will be presented with an on-screen list of available choices from which to define the number of sides the polygon should have. A polygon can be designed to have any number of sides from 3 to 12.

This screen item only appears if the shape chosen is Regular Polygon or Solid Polygon.

Fill Pattern

You will be presented with an on-screen list of available fill patterns from which to choose. The available choices are:

- Solid
- Down Diagonal
- Up Diagonal
- Grid
- Diamond
- Horizontal lines
- Vertical Lines
- Dots
- Windows Wallpaper

The choices vary based on the printer and shape chosen.

Gray Level

You will be presented with an on-screen list of available gray level shading options.

This option appears when a Solid fill pattern is chosen for shapes other than Regular polygon or Solid Polygon. The choices for gray level shading vary based on the printer chosen.

Once you have finished entering the specification data for the field, the field can be placed on the format.

Polygons

For placing a polygon field on the format, follow these steps:

The following message will appear:

Move pointer to the CENTER of the polygon. Press ENTER or press and hold mouse button.

You may now move the pointer to increase or decrease the polygon size as well as to change the rotation of the polygon. The polygon will appear on the display as you use the mouse or arrow keys to expand or contract the area.

The following message will appear:

EXPAND BOX to proper size. Use arrow keys then ENTER or drag with mouse.

When you have expanded the polygon to the proper size, release the mouse button or press ENTER. If the shape chosen is Regular Polygon, you will also be prompted to expand the borders of the polygon to the proper thickness. The following message will appear:

Adjust sides to proper thickness. Use arrows then Enter or drag with mouse.

The left arrow will decrease the thickness of the polygon and the right arrow will increase the thickness of the polygon. When the polygon is at the proper thickness, press Enter. The polygon will be added to the format and displayed on the screen.

Enable Printing

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Field Width

Enter the width of the field in inches and hundredths of inches.

Horizontal Thickness

Enter the Horizontal Thickness of the box in inches and hundredths of inches.

Vertical Thickness

Enter the Vertical Thickness of the box in inches and hundredths of inches.

Outlined

Select Yes to outline the shape with a solid line

Field Height

Enter the Height of the field in inches and hundredths of inches.

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Adding a Picture Field

Adding a Picture Field	Horizontal Position	Vertical Position	Field Name
Comment	Field Width	Field Height	Source of Data
Field Direction	Field Contrast	Maintain Aspect Ratio	Enable Printing
Field Color			

Adding a Picture Field

To add a picture field, click on the **Add Picture Field** icon located on the Drawing Toolbar or choose **Insert | Picture Field** from the menu bar.

NOTE: Over 40 of the most popular graphic types are supported.

Pictures can be created using Microsoft Paintbrush®, Adobe Photoshop®, Jasc Paint Shop Pro® and many other graphics applications. Files with the .EPS extension can only be included on formats designed for a Postscript printer.

Color pictures can be printed in color to a color printer from within the software under the following criteria. If your image has no color information accompanying it, then the software can not use the image. In this case, the image will not print properly. If your image has color information accompanying it, then the software

does not have a problem printing the image. For example, if your image was saved as a 16.7 million color image, the image has no color information accompanying it. If the image was saved as a 256 color image, the image will have color information accompanying it.

You are now presented with the picture specification screen. Once all specification data is entered you will be returned to the Edit screen. You will be instructed to define the size of the picture. You can use the mouse or the arrow keys. Placing the picture field on the format display is similar to the process of placing a box field on the format.

Use the arrow keys or drag with mouse.

When you have successfully placed and sized the area for the picture, the software will read in the picture and add it to the format. It will be displayed in the proper size.

NOTE: If this field's Source of Data is When Printed or Database, the area for the picture will show as a checker-board on the format.

Each of the picture data items are described below.

Horizontal Position

Enter the Horizontal Position of the field.

Vertical Position

Enter the Vertical Position of the field.

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter an optional comment for the field. Used in reports.

Field Width

Enter the Width of the field in inches and hundredths of inches.

Field Height

Enter the Height of the field in inches and hundredths of inches.

Source of Data

The data for this field can be one of the following:

- Fixed
- When Printed
- Database

Field Direction

The field can be printed in any of the 4 following orientations:

- Normal (left to right)
- Bottom to top
- Upside down (right to left)
- Top to bottom

An example is shown of each orientation in the box at the side of the display screen when this item is being entered.

Field Contrast

The field can be printed normal (black print on white background) or reverse (white print on black background).

Maintain Aspect Ratio

Selecting Yes for this option will allow pictures to maintain their original aspect ratio. Selecting No will allow pictures to be stretched to fill the available defined field size.

Enable Printing

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Field Color

When designing a label for a COLOR printer, you can add a color to a monochrome picture. Select a color from the available choices in the directions. When the picture field is printed, the picture will be printed in the selected color.

This item will only appear if the selected picture was not originally saved as a color graphic.

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Adding a Circle or Ellipse Field

Adding a Circle or Ellipse	Field Name	Comment	Horizontal Position
Vertical Position	Enable Printing	Field Width	Field Height
Line Thickness	Shape	Fill Pattern	Gray Level

Adding a Circle or Ellipse

To add a circle or ellipse field, click on the **Add Circle or Ellipse Field** icon located on the Drawing Toolbar or click **Insert | Circle or Ellipse Field** from the menu bar.

You will be instructed to define the location and size of the circle or ellipse then, place it on the format.

You will need to move the pointer to increase or decrease the size of the circle or ellipse. The circle will appear on the display as you use the mouse or arrow keys to expand or contract the area of the circle. When you have expanded the circle to the proper size, release the mouse button or press ENTER.

For printers that support outlined circles and ellipses, you have the ability to adjust the thickness of the circle or ellipse border.

The left arrow will increase the thickness of the circle or ellipse and the right arrow will decrease the thickness of the circle or ellipse.

When you have successfully placed and sized the area for the circle or ellipse, press ENTER. The circle or ellipse will be added to the format and displayed.

If Circles and/or Ellipses are not supported for the printer, the menu option will be grayed.

Each of the Circle/Ellipse data field items are described below.

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report,

copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter a comment for this field.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the horizontal position of the field

Enable Printing

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Field Width

Enter the Width of the field in inches and hundredths of inches.

Field Height

Enter the Height of the field in inches and hundredths of inches.

Line Thickness

Enter the thickness of the field in inches and hundredths of inches.

Shape

Please select one of the following variations. Available choices are:

- Circle (Outlined Circle)
- Disc (Solid Circle)
- Ellipse (Outlined Ellipse)
- Solid Ellipse

Fill Pattern

You will be presented with an on-screen list of available fill patterns from which to choose. The available choices are:

- Solid
- Down Diagonal
- Up Diagonal
- Grid
- Diamond
- Horizontal lines
- Vertical Lines
- Dots
- Windows Wallpaper

The choices vary based on the printer chosen.

Gray Level

You will be presented with an on-screen list of available gray level shading options. This option appears when a Solid fill pattern is chosen.

The choices for gray level shading vary based on the printer chosen.

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Entering Specification Data

To define a bar code or text field, or to specify the format size, there are various items that must be specified such as: size, type, source of data for the field, etc. You have the option to display the specification screen in tabbed dialog boxes or single sheets. The following describes the steps you will take to input this information, assuming the specification screen is displayed on a single sheet.

The dialog box will show a list of prompts. There is one prompt for each data item needed to define the field.

A highlighted bar appears on each item in turn. When the highlighted bar is moved to a particular item, the value for that item should be entered.

The highlighted bar starts at the topmost item on the screen. After you have typed the value for an item and then pressed TAB, the highlighted bar moves to the next item. You may also click with the left mouse button on any item if you need to change the value entered or use the SHIFT-TAB keys to move to any previous item.

For each item, directions for entering the item appear in a text box at the bottom of the dialog box. Some items require a number, with or without a fractional part. Some require one letter or number to indicate your choice from a set of options. Others require a group of letters or numbers.

If the value you entered is incorrect or if you have not entered information for a mandatory field, you will hear a beep and see an error message displayed just below the Directions Box. The message should help you in correcting the error. The highlighted bar will remain on the incorrect field. You may correct the value entered and then proceed or you may use the TAB key to proceed without correcting the item.

You will see that some items have predefined or default values already displayed. These are values from a previously defined field. If you want that value, you do not have to retype it. Simply move on to the next item. If you press TAB, the value will stay the same.

WHEN DATA ITEMS ARE COMPLETED

You have completed entering data when you finish the last item.

At this point, the highlighted bar disappears. All the data items are checked. If any error is found, you will see a specific error message displayed just below the Directions Box for the item in error. The Directions Box itself will display a message asking you to re-enter the item.

To correct the error, enter a correct value for the item. In some cases, the highlight bar will go to the item which is most likely the cause of the error. For other errors, there will be several ways to correct it. When you have made the necessary changes, click OK or press ENTER to signal that you have completed correcting the data.

If you choose not to correct the error, press ESC. The field will not be added to the format or when entering format size data, the new format will not be added.

If you are satisfied that the values entered are what you want, click OK or press ENTER to continue the placement of the bar code or text fields on the format display.

If you want to make additional changes to any data item, press any key (besides the ENTER key). The highlighted bar will reappear at the first item. You can now move the bar to the proper item and change it. Click OK or press ENTER to accept the changes. Choose Cancel to abandon changes. If you decide that you do not want to add the new field or the new format, press ESC. The field will not be added and you will return to the Edit screen or when entering format size data, the new format will not be added.

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Placing a Field on the Format

When you have completed the definition of a bar code or text field, the Edit format display screen will return, showing your print area. On the display screen is a box representing the area that will be taken up by the field. To position the field, you can drag on the box with the mouse, use the arrow keys or the keys marked HOME and END.

Each arrow key moves the box in the direction indicated by the arrow printed on the key. Each keystroke represents a movement of .01 inches or .1mm. To make larger movements, hold the SHIFT key down while using the arrow keys. This will cause each keystroke to move the box in steps of .10 inches or 1.0mm.

The HOME key will move the box to the upper left corner of the format display area and the END key will move the box to the lower right corner.

You may move the box to the center of the format by pressing **C**. By pressing **H**, the field will be centered horizontally. By pressing **V**, the field will be centered vertically.

The coordinates of the upper left corner of the box are shown on the lower right side of the format display. The horizontal or **H** coordinate shows the distance in inches from the left edge of the format print area. The vertical or **V** coordinate shows the distance in inches from the top edge of the format print area.

When you have placed the box at the desired location release the mouse button or press ENTER. The field will be drawn on the format display. The process of adding the bar code or text field is now complete. If you later decide to place the field in a new location, you may do so by using the Move option, or by clicking on and dragging the field.

Grid

Extended Cross Hairs

NOTE: If a text field font selected is too small to be shown on screen, only a series of unreadable characters will be depicted. This field information can be viewed by using the Zoom In option.

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Copying a Field

To add a copied field, select the field to be copied then click the copy icon on the main toolbar. Next, click the paste icon on the main tool bar. The copied field will appear on the format. You may also select the field to be copied, choose Edit | Copy from the menu bar, then choose Edit | Paste from the menu bar. The copied field will appear on the format.

This selection allows you to make a duplicate of an existing field or fields and place the field or fields anywhere on the format.

To select more than one field, see Selecting Multiple Fields.

Choosing a Group of Fields

To select more than one field on the format:

Click the left mouse button and drag the mouse around the fields that you wish to choose.

You may also choose multiple fields one at a time by holding down the CTRL key and clicking on the fields that you wish to select. Or selecting the Choose group of fields icon and dragging over all of the fields that you wish to select. In order to better identify the selected fields, the selected fields will change color to blue, by default.

This option allows you to choose more than one field so that you may move a group of fields, erase a group of fields or copy a group of fields. You may also Align a Group of fields by choosing the group and then selecting Tools | Align from the menu bar.

Selecting a Field on the Format Display

Several commands operate on a particular field. Some of these commands are: Move, View/Change, Erase and Copy a field. To specify which field, the software prompts you to select the field by moving the pointer on the format display until the pointer touches the field that you want. When any field is touched, that field will begin to blink. This confirms which field the pointer is touching.

Therefore, when you are prompted to move the pointer to a field for any function, move the pointer until the field you want is blinking. Click the right mouse button or press ENTER.

You may also hold the left mouse button down while dragging a lasso around the desired fields to highlight them.

To quickly select all fields on the format, choose **Edit | Choose All Fields** from the menu bar. You can individually select and deselect fields by holding the CTRL key on your keyboard and clicking the left mouse button.

Choose All Fields

To select all fields on a format, select **Edit | Choose All Fields** from the menu or right mouse click anywhere on the format background and select **Choose All Fields.**

Moving a Field

To move a field to a new location on the format, left-click once to highlight it, then select the **move field** icon from the toolbar. The selected field will now be outlined in a grey box. You can now drag the field to its desired position using the mouse. You may also use the arrow keys or use the HOME and END keys to reposition the field. When the box is in the desired location, release the mouse button or press ENTER. The field will be displayed in the new location.

While you are moving the field, pressing the H key will center it horizontally, pressing the V key will center it vertically and pressing the C key will place the field in the center of the format.

You can also select **Edit | Move Field** from the menu bar to move a field or group of fields.

Erasing a Field

To erase a field, Select the field you wish to erase and click the Erase Field icon from the main toolbar or choose **Edit | Erase Field** from the menu. You will be prompted with a message asking you to confirm that you wish to erase the field.

Changing an Existing Format

To change an existing format, click the **Open** icon from the toolbar or choose **File | Open** from the menu bar. A submenu will appear allowing you to choose which type of file you would like to open; label format (*.fmt), database (*.dbf), report (*.rpt) or a serial file (*.ser). Choose label format (*.fmt) to open an existing format.

You are prompted for the name of an existing format. The last format used is the default name displayed. At the same time, an alphabetized listing of the present format files in your directory will be displayed across the screen in the Open Dialog box. To display information regarding a file, highlight the filename and a description, along with a thumbnail preview of the format will be shown at the bottom of the Open box.

NOTE: If you are updating from an older version, see converting formats. Formats created under an older version will not have thumbnail previews until they are saved under the new version.

Viewing/Changing a Field

To view or change a fields properties, double click the field of interest, select the field from the Field List tree structure, or you may right mouse click on any field and select View Field Specifications to view and change its specifications.

This selection allows you to review the properties for a field. You may then make changes or simply view the properties without making changes. For box and line fields this will be equivalent to the Move Field option. For pictures, the field may be resized as well as repositioned.

The screen will now change to show the selected field's Property dialog box. They will be displayed in the same format as when the field was defined.

When you have made the desired changes and have chosen to make the changes effective, by selecting the OK button, the screen will return to the format display and you may re-position the field or leave it in the same position. The updated field will be re-displayed with its new attributes.

Change Common Properties on Multiple Fields by selecting two or more fields, you may change all properties that are common to them. Once the fields are selected, open the properties dialog box using one of the previously mentioned techniques. Only the properties that are common to all of the chosen fields will be shown. Once you change any of these properties, the changes will apply to all of the selected fields.

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Rotating a Label

To rotate a label and its fields, select **Tools | Rotate** from the menu bar or right mouse click anywhere on the format background and choose Rotate from the menu.

The label and its fields will rotate in 90 degree increments. However, if the printer that the label format was created for has a maximum width and it is exceeded by rotating the label 90 degrees, it will be rotated 180 degrees.

Resizing Fields

Fields can be resized by clicking once on the field and using the mouse to drag it to the desired size.

- Use the handles on the top and bottom of the field to stretch it vertically.
- Use the handles on the left and right sides to stretch it horizontally.

- The corner handles will simultaneously resize the field vertically and horizontally to create a proportionally sized field.

NOTE: When a barcode field is stretched vertically, the height of the barcode will increase. When a barcode field is stretched horizontally, the barcode multiplier will increase. When a text field contains a True Type font and "0" is entered for the width, the field will automatically stretch vertically and horizontally regardless of which handle is used to resize the field.

Pointer

The small arrow on the document interface that moves as the mouse is moved. Commands can be selected by positioning the arrow over a desired selection and clicking one of the mouse buttons.

Cut

Removes the selected object from the active format and places it on the Clipboard.

Copy

Places an exact copy of the selected object to the Clipboard.

Paste

Inserts the contents of the Clipboard at the insertion point, and replaces any selection. This command is available only if you have cut or copied an object.

Erase

Select the Erase Field icon or choose **Edit | Erase Field** from the menu bar to permanently remove a selected field from the active format.

Undo

This function reverses your last action. To Undo the last editing change, click the Undo Icon or choose **Edit | Undo** from the menu bar or press CTRL-Z.

Opening

Opening a File

To open an existing File click the Open icon from the toolbar or choose **File | Open** from the menu bar. A submenu will appear allowing you to choose which type of file you would like to open; label format (*.fmt), database (*.dbf), report (*.rpt) or a serial file (*.ser). Select which type of file you wish to open.

You are prompted for the name of an existing file. The last file used is the default name displayed. At the same time, an alphabetized listing of the present files in your directory will be displayed across the screen in the Open Dialog box. To display information regarding a file, highlight the filename and a description, along with a thumbnail preview of the format will be shown at the bottom of the Open box.

From the File Menu you also have the ability to open:

- Recent Batch Formats
- Recent Edited Formats
- Recent Database Files
- Recent Reports
- Recent Serial Files

It is also possible to open a format for editing by Double-Clicking on it, or Right-Clicking on the format file and selecting "Open" from the pop-up menu. Formats can be printed by Right-Clicking on the format and selecting "Print" from the pop-up menu.

Recent Batch Formats

Choose **File | Recent Batch Formats** from the menu bar to display a list of recently saved Formats, which can then be opened.

Recent Edited Formats

Choose **File | Recent Edited Formats** from the menu bar to display a list of recently created/edited Formats, which can then be opened.

Recent Database Files

Choose **File | Recent Database Files** from the menu bar to display a list of recently Edited Databases, which can then be opened.

Recent Reports

Choose **File | Recent Reports** from the menu bar to display a list of recently created/edited reports, which can then be opened.

Recent Serial Files

Choose **File | Recent Serial Files** from the menu bar to display a list of recently created/edited Serial Files, which can then be opened.

Saving

Saving a Format

To save a format, click on the Save icon or choose **File | Save** from the menu bar.

This function causes all the information which defines the format to be stored on your hard disk. The saved format will have the file name consisting of the format name with the extension of .FMT. For example, if the format is named TEST, then the file name for the saved format will be TEST.FMT. Also, if any fields were specified with the report data option, a tracking data file will be created. This file will have the extension .RPT.

Enter a filename for the format. Long filenames are supported therefore, they can be up to 255 characters long. Click Save.

If an error occurs, you will hear a beep and a message describing the error will be displayed.

After the format is saved, the following message appears:

The format *formatname* HAS BEEN SAVED.

You may now continue and make additional changes to the format or quit.

NOTE: If you want to keep a newly created format or make any changes you made permanent, you must save the format. If you forget to save the format and try to quit after making changes, you will be warned and given a chance to save before you quit. However, it is recommended that you make a point of using the Save function frequently while designing the format and especially before quitting.

NOTE: If a format produces a Format Tracking Report, every time that format is saved a new tracking report is created. If there was any data in the file, it will be erased. The data previously contained in the file will no longer be available. Therefore, before changing a format it is a good idea to print out any Tracking Report that is associated with this format.

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Save As

To use the Save As function, choose **File | Save As** from the menu bar.

The Save As function is very similar to the Save function. The only difference is that you will be prompted to enter a new name for the format before it is saved.

The Save As function is useful for making several copies of a format or for creating several versions of a format by changing a format and then re-saving it under a new name. With this function, you also have the ability to save the format to a floppy disk. You need to specify a drive designator and the filename.

NOTE: You may use the save as function as many times as necessary to make as many versions of the format as required. The end result is that the original format, previously saved, remains intact, and a new format, identical or amended, is created with a different file name.

Edit

Undo

This function reverses your last action. To Undo the last editing change, click the Undo Icon or choose **Edit | Undo** from the menu bar or press CTRL-Z.

Cut

Removes the selected object from the active format and places it on the Clipboard.

Copy

Places an exact copy of the selected object to the Clipboard.

Paste

Inserts the contents of the Clipboard at the insertion point, and replaces any selection. This command is available only if you have cut or copied an object.

Choosing a Group of Fields

To select more than one field on the format:

Click the left mouse button and drag the mouse around the fields that you wish to choose.

You may also choose multiple fields one at a time by holding down the CTRL key and clicking on the fields that you wish to select. Or selecting the Choose group of fields icon and dragging over all of the fields that you wish to select. In order to better identify the selected fields, the selected fields will change color to blue, by default.

This option allows you to choose more than one field so that you may move a group of fields, erase a group of fields or copy a group of fields. You may also Align a Group of fields by choosing the group and then selecting Tools | Align from the menu bar.

Choose All Fields

To select all fields on a format, select **Edit | Choose All Fields** from the menu or right mouse click anywhere on the format background and select **Choose All Fields.**

Erasing a Field

To erase a field, Select the field you wish to erase and click the Erase Field icon from the main toolbar or choose **Edit | Erase Field** from the menu. You will be prompted with a message asking you to confirm that you wish to erase the field.

Moving a Field

To move a field to a new location on the format, left-click once to highlight it, then select the **move field** icon from the toolbar. The selected field will now be outlined in a grey box. You can now drag the field to its desired position using the mouse. You may also use the arrow keys or use the HOME and END keys to reposition the field. When the box is in the desired location, release the mouse button or press ENTER. The field will be displayed in the new location.

While you are moving the field, pressing the H key will center it horizontally, pressing the V key will center it vertically and pressing the C key will place the field in the center of the format.

You can also select **Edit | Move Field** from the menu bar to move a field or group of fields.

Viewing/Changing a Field

To view or change a fields properties, double click the field of interest, select the field from the Field List tree structure, or you may right mouse click on any field and select View Field Specifications to view and change its specifications.

This selection allows you to review the properties for a field. You may then make changes or simply view the properties without making changes. For box and line fields this will be equivalent to the Move Field option. For pictures, the field may be resized as well as repositioned.

The screen will now change to show the selected field's Property dialog box. They will be displayed in the same format as when the field was defined.

When you have made the desired changes and have chosen to make the changes effective, by selecting the OK button, the screen will return to the format display and you may re-position the field or leave it in the same position. The updated field will be re-displayed with its new attributes.

Change Common Properties on Multiple Fields by selecting two or more fields, you may change all properties that are common to them. Once the fields are selected, open the properties dialog box using one of the previously mentioned techniques. Only the properties that are common to all of the chosen fields will be shown. Once you change any of these properties, the changes will apply to all of the selected fields.

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View

Print Queue

To View or Change the Print Queue, click the Print Queue icon, choose View | Print Queue from the menu bar or press F2.

The Print Queue is a job staging area for your various printing jobs. The Print Job files reside on the hard disk. The software manages these files and loads a new job after each job is completed until it has exhausted the Print Queue. This will allow you to load an entire day's work at the start of a shift.

The Print Queue can hold up to 220 jobs.

Log Reader

Starting the Log Reader	Opening./Viewing a User Log
Printing a User Log	About

Starting the Log Reader
To Start the Log Reader click the '**Start the User Log Reader**' icon on the function toolbar. You will be presented with a log on dialog box. Enter your User Name and Password and then click '**OK**' to start the Log Reader.
Note: Only users that have Manager Functions will be permitted to run the Log Reader.

Opening/Viewing a User Log
Open a User Log by clicking the '**Open**' icon or select **File | Open** from the menu bar and then browse to the desired User Log file. You can also choose from a list of recently viewed User Logs from the **File** menu.

Once opened, you will be able to see a list of all of the events with the time, date, and user or manager involved. Clicking on any of these events will display the details of the event below the list.

Printing a User Log
To print click the currently opened User Log click the '**Print**' Icon or select **File | Print** from the menu bar. You may print the User Log to your ink-jet, laser or dot matrix printer. Select **File | Print Preview** from the menu bar for a preview of the User Log. By Selecting **File | Print Setup** from the menu bar you will be able to set up the printer you wish the User Log to Print to.

About
Click the '**About**' Icon or select **Help | About Log Reader** from the menu bar to find the version of Log Reader.

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Position Grid

Position Grid allows you to set the grid cell size for the exact placement of fields on a format.

Snap to Grid

Choosing snap to grid will "snap" the selected field to an anchor point on the label format. Using snap to grid allows fields to be placed and aligned more precisely on the label. Display Grid must be activated prior to using Snap to Grid.

Display Grid

Choosing display grid will populate the format with a series of evenly spaced points that make the precise placement of objects much easier. To ensure better precision when placing fields on the label, use the Snap to Grid feature.

To enable the Display Grid option select View | Display Grid from the menu bar or click the Display Grid icon.

Tool Bars

Standard Tool Bar

The Standard Tool Bar provides the following functions:

- Create a New label format, database, or serial File
- Open an existing label format, database, serial file, or report.
- Save opened file
- Print a batch of formats
- View or change Print Queue
- Test Print the opened format or tracking report
- Cut
- Copy
- Paste

- Choose group of fields
- Erase Field
- Lock Field
- Move Field
- View and Change Field Specification
- Undo
- Change Format Specification
- Close option and Cancel Current Function

To display the Standard Tool Bar Select **View | Toolbar**s from the menu bar. If a check mark appears next to its name it is already displayed.

Drawing

The drawing toolbar provides the following functions:

- Create Barcode using Wizard
- Add Barcode Field
- Add Multi-Source Barcode Field
- Add Text Field
- Add Multi-Source Text Field
- Add Line Field
- Add Box Field
- Add Picture Field
- Add Circle or Ellipse Field
- Change Mouse Pointer to Magnifying lens
- Restore Mouse Pointer
- Zoom Level

To display the Drawing Tool Bar Select View | Toolbars from the menu bar. If a check mark appears next to its name it is already displayed.

Function

The Function Toolbar provides the following functions:

- Program Options
- Printer Configuration
- Users
- Report File
- Start the User Log View
- Database
- Start Databaseview

- Serial File
- Field Name Box

To display the Function Tool Bar Select **View | Toolbars** from the menu bar. If a check mark appears next to its name it is already displayed.

Tools

The Tools Toolbar provides the following functions:

- Display Grid
- Snap to Grid
- Cross Hairs
- Rotate label format 90 degrees clockwise
- Align Left
- Align Right
- Align Up
- Align Down
- Center Horizontally
- Space Horizontally
- Space Vertically
- Center Vertically

To display the Tools Tool Bar Select **View | Toolbars** from the menu bar. If a check mark appears next to its name it is already displayed.

Navigator

The Format Navigator shows a thumbnail preview of the entire format. The box indicates the area of the format that is being viewed. By selecting an area within the Format Navigator you are able to move to a specific area of a format that may not be visible on the format display.

Field List

Displays a list of fields organized in specific categories such Field Type, Source of Data, and Fonts. This allows you to quickly and easily view the field types and sources of data being used on a label format.

A specific field can be selected by single clicking on that field's name in the Field List and its properties sheet can be displayed by double clicking the field name.

Zoom

Zoom Out

Select the magnifying glass icon from the tool bar. The pointer will change to a magnifying glass and will Zoom Out by clicking the **Right** mouse button. To exit zoom mode, click the pointer icon in the toolbar. The Zoom Out function can also be selected by choosing **View | Zoom Out** from the menu bar.

The zoom function will allow you to magnify or minimize a section of the format, or on smaller labels, the entire format.

Zoom Level

You can choose a specific desired Zoom Level to maximize or minimize a section or entire format. Choosing a lower percentage causes the format to "Zoom Out" or minimize. Choosing a higher percentage causes the format to "Zoom In" or maximize.

The Zoom Level can be changed by selecting **View | Zoom Level** from the menu bar, right mouse clicking anywhere on the format background and selecting the desired zoom level from the menu, or selecting the desired Zoom Level from the Zoom Level text box on the tool bar.

The zoom level will also be saved within the format.

Zoom In

Select the magnifying glass icon from the tool bar. The pointer will change to a magnifying glass and will Zoom In by clicking the **Left** mouse button. To exit zoom mode, click the pointer icon in the toolbar. The Zoom In function can also be selected by choosing **View | Zoom In** from the menu bar.

The zoom function will allow you to magnify or minimize a section of the format, or on smaller labels, the entire format.

Insert

Bar Code Field

Adding a Bar Code Field

Adding a Bar Code Field	Horizontal Position	Vertical Position	Field Name
Comment	Symbology	Subset	Control and Function Characters
UPS GroundTrac	Check Digit	Height Multiplier	Row Size
Error Security Level	Truncate Symbol	Interpretation	Bar Code Height
Added Characters	Bar Code Ratio	Bar Width Multiplier	Field Direction
Source of Data	Center Data	Report Data	Increment/Decrement Field
Type of Increment/Decrement	Increment/Decrement Sequence	Change Amount	Update Database
Add-On Characters	Leading Characters	Trailing Characters	Enable Printing
Print Criterion	Bar Code Width Magnification	Random Weight Check Digit	
Increment/Decrement Maximum	Increment/Decrement Minimum		

Adding a Bar Code Field

To add a new bar code field, click on the **Add Barcode Field** icon located on the Drawing toolbar or choose **Insert | Bar Code Field** from the menu bar.

You will now be presented with the Create Bar Code screen. Click on entering specification data for details.

Once you have entered all items correctly, the format display screen will again be shown with the box representing the area for the bar code. You should now position the bar code field.

The available bar code symbologies are listed here. Bar code symbology selections vary by printer.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the vertical position of the field.

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter a comment for this field.

Symbology

The available bar code symbologies are specific to the printer being used.

NOTE on Composite Bar Codes: Use a pipe symbol '|' to separate the linear data from the 2D data when creating Composite Bar Codes in the Software

Subset

When using a Code 128 bar code you will be able to choose which Subset to use for the symbol. Selecting *Automatic* will let the software choose a Subset to create the shortest symbol. When it is required, you may also select a specific Subset to force the symbol to stay in that Subset (Subset A, Subset B, or Subset C)

Control and Function Characters

The software allows you to embed control codes or function codes into a bar code when permitted by the symbology. For example Code 128 or PDF417.

A pop-up menu enables easy selection of the correct code. To insert control codes click on the 'Control Characters' button and select the desired code from the pop-up list. Control codes are displayed in the user interface as the control code name surrounded by angle brackets "<>". For example, inserting a carriage-return in a field is displayed as <CR>.

You may also use the following character sequences to specify control codes:

\xHH

Where:

\x specifies the beginning of a hexadecimal string;

HH represents a 2 digit hexadecimal value.

For example, if a Code 128 or PDF417 bar code requires character data with an embedded carriage return, type \x0D at the end of your data. The 0D at the end of the character string is the hexadecimal value for a carriage return. See the table of hexadecimal values.

For those users that require embedded function characters, the software allows you to embed the function characters as follows:

\&FN1 Function 1

\&FN2 Function 2

\&FN3 Function 3

\&FN4 Function 4

UPS GroundTrac

When creating a UPS GroundTrac symbology, you can choose to print the bar code with or without the Human Readable interpretation. If selected, the interpretation will automatically be formatted to the correct specification based on the printer chosen. When printing to the Apollo, the human readable interpretation will need to be created as a special formatted text field to comply with the UPS Bar Code Specifications. For additional information, please refer to UPS Bar Code specifications.

Check Digit

Select an optional check digit for the chosen symbology. This option appears for certain symbologies only.

Height Multiplier

Calculates the height of the symbology. Available for certain symbologies only.

Row Size

Enter the number of data code words in each row. Each code word represents about 2 characters.

Error Security Level

Enter a number for the level of security desired. Zero (0) provide error detection only. Higher numbers increase the symbol size and error correction capability.

Truncate Symbol

Select Yes to omit the right hand row indicators and stop pattern. Select No to print the full symbol.

Interpretation

The interpretation refers to the human readable characters printed either below a horizontal bar code or to the side of a vertical bar code. One of several Human Readable Interpretations is available to you depending on your choice of symbology and field direction. Typically, human readable interpretation is not available for 2D codes.

NOTE: Whenever symbology or field direction is changed, this item must be changed or it will return to its default value.

Bar Code Height

The height of the bars that make up the bar code. This can have a value from .1 inches to 3.9 inches or .1mm to 100mm.

Added Characters

Following is a list of the additional options available when choosing Code 128 B or Code 128 C:

- No Additional Characters
- Function 1 + Mod 43 Check Digit
- Function 1 + Mod 10 Check Digit
- Function 1 Only
- Mod 43 Only
- Mod 10 Only

Bar Code Ratio

This is the ratio of the wide to narrow elements of a bar code.

Bar Width Multiplier

The number of dots used to define the narrow element of a bar code. This allows you to establish the density of your bar code.

Field Direction

The bar code can be printed in one of 4 directions:

- Left to right across the format
- From bottom to top of format
- Right to left (upside down) across the format
- From top to bottom of format

Source of Data

The data for the field can be one of the following:

- FIXED
- WHEN PRINTED
- COPIED
- SERIALIZED
- LINK
- DATABASE

Center Data

This option will cause the bar code to be centered within the defined print area. That is, if the contents of the field contain fewer characters than the maximum, the bar code will be moved so it is centered within the field's area.

Report Data

To record the value of this field whenever the format is printed, select Yes. Otherwise, select No.

The data in this field will be stored each time the format is printed. If no fields are specified with this option, no format tracking data file will be created.

Increment/Decrement Field

The following options are available:

- Increment
- Decrement
- Constant

If the field is copied, the increment or decrement specified for the copy field will apply to the copied field. If the field contains more than 10 numbers, the increment or decrement will apply only to the last 10 numbers. If the field is linked, the increment or decrement specified for the source field will apply to the link field.

Type of Increment/Decrement

The choices for increment/decrement are as follows:

- Numeric
- Alphabetic
- Alphanumeric
- Hexadecimal
- Octal
- Custom

NOTE: Increment or decrement starts from the right side of the field value and increments or decrements toward the left.

Increment/Decrement Sequence

The custom incrementation option allows you to define a specific sequence of characters to increment or decrement. Valid characters are the digits 0-9 and the letters A-Z.

See Examples

NOTE: Incrementing or Decrementing starts from the right side of the field value and increments or decrements toward the left.

Change Amount

The numerical amount by which to increment or decrement the field.

Update Database

Select Yes to have the database updated after each job. This will reflect the last value of the incremented/decremented field. Select No to leave the database field unchanged.

Increment/Decrement Maximum

Enter the maximum value the field can reach before rolling over to the minimum value. NOTE: This option requires the computer to do the field incrementation and not the printer. The computer will send the labels one at a time to the printer.

Increment/Decrement Minimum

Enter the value the field should be reset to after reaching the maximum value. NOTE: This option requires the computer to do the field incrementation and not the printer. The computer will send the labels one at a time to the printer.

Add-on Characters

You may specify a character string of up to 10 characters to always be appended to the front and/or end of the bar code. These characters will always be encoded in the bar code. The following options are available:

- None
- Header
- Trailer
- BOTH Header and Trailer

Leading Characters

If you choose to attach header characters to the bar code, enter the constant string of characters for the header.

Trailing Characters

If you choose to attach trailer characters to the bar code, enter the constant string of characters for the trailer.

Enable Printing

This selection will allow you to define a field from any of the available sources of data and not have that field printed on the format.

For example: If you want your customer's part number to be printed on the format, but you do not want your part number printed on the format but you do want it included in the report that is generated. You will need to generate a field defining your part number, disable the printing of the field and enable the report data function.

You could also use this function to put a message on the screen for your operator. Such as, the color or size stock that this format should be printed on.

Enter Y to print the field on the format. Enter N to display the field on the format, but do not print the field. Enter C to specify a print criterion for the field.

See Appearance to learn how to change the color of non-printing fields.

Print Criterion

Enter the condition for which this field should be printed. The condition entered is an expression that can contain currently defined field names, numeric or alphabetic constants, mathematic operators, comparison operators or logical operators. Numeric or alphabetic constants need to be enclosed in double quotes (").

For example, you can create a text field that has a fixed value of 'SALE'. You only want this field to print when the 'PRICE' field is less than 6.99. You can select Conditional Print for the field named 'SALE' and type the following expression in for Print Criterion: **PRICE < 6.99.** Where: **PRICE** is the field name you want to compare. < is the comparison operator LESS THAN and 6.99 is the value to match. The 'SALE' field will now only print when the value of the PRICE field is less than 6.99.

Another example would be a text field with a fixed value of "Frozen". You only want this field to print when another field called 'CONDITION' is equal to "True". Type **CONDITION = "True"** in for Print Criterion. Any time the CONDITION field is equal to "True" the "Frozen" field will print. If CONDITION is empty or equal to something other than "True" then "Frozen" will NOT print.

The **LIKE** comparison operator allows you to perform pattern matching. You can substitute a percent (%) or an underscore (_) character for a whole word, a group of characters or a single character. A percent sign (%) represents a whole word or any GROUP of characters in the data. The underscore (_) represents any SINGLE character in the data.

See Examples

Bar Code Width Magnification

Allows you to enter a value in the range of 1-99 to magnify the narrow and wide bar sizes. This option is only available for Datamax I-Class and W-Class printers.

Random Weight Check Digit

Select Yes to enable the random weight check digit. Please note that when selecting Yes, your screen image will not match your printed output. This option applies to UPC/EAN and is available for the Apollo/A Series printers only.

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Source Data

Fixed

Fixed Data	Edit	Control Characters

Fixed Data
Enter the exact data that you wish to be printed in the field.

Edit
Click Edit to display a text editor.

Control Characters
Choose from a list of predefined characters to be included in the data of defined fields.

When Printed

What is a When Printed field?

The field data is variable. When you print the format, you will be prompted to fill in the value of the field. It can be changed for each set of formats that are printed. For a text field, your input may come from the keyboard, a serial port, a Command File or a wedge type bar code scanner. For a paragraph field, you will type in the paragraph at the time of printing. With the exception of TAB key usage, the paragraph will be printed exactly as typed. To force a new line break, press CTRL-ENTER simultaneously; otherwise, the text will automatically be arranged into lines when printed (word wrap). The following prompts will apply:

Operator Prompt Line	Prompt Repeats	Prompt Number	Data Checking
Maximum Field Length	Allow Blanks	Selection List	

Operator Prompt Line
Define the prompt you wish to appear at the time of printing. The prompt will be displayed above the data entry area for the field.

Prompt Repeats
Select to enable the printer to prompt for this field on every label. This only applies when downloading to a memory card in the printer, and when the printer prompts for the label quantity.

Prompt Number
The order in which you wish the prompt to appear on the operator input screen. This option will appear if there is more than 1 prompted field defined for the format.

Data Checking
An indication of the type of validation to be done on operator entry for a 'When Printed' field. The types of Data Checking include:

- No Validation
- Numeric
- Alphabetic
- Alphanumeric
- Upper Case Characters
- Upper Case Alphabetic
- Upper Case Alphanumeric
- Fixed List of Values

Maximum Field Length
If you define the field as 'When Printed', you must supply the maximum length of the field in character positions.

Allow Blanks
An indication of the allowable INCOMPLETE operator input for a 'When Printed' field. The choices are as follows:

- Fully or Partially Blank
- Partially Blank
- Fully Blank
- No Blanks Allowed

Selection List
Enter a list of values which the operator can choose from. The values that you type in will appear as choices on the Print screen. Each value must be separated by a space. Short phrases must be enclosed in double quotes. To advance to a new line, press CTRL+ENTER. For example, choices are RED GREEN BLUE.

To display this selection list, click on the down arrow next to the field input box on the data input screen within the Print screen.

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Copied

The data is copied from another field called the copy field. The data in this field will be the same as the data in the copy field.

Name of Copy Field
If the field is defined as 'Copied', you must select the name of the copy field which will supply the data for this field. To copy a bar code check digit, choose the bar

code field name with the '@' symbol before it. Available field names are listed in the dialog box.

@TRUECOUNT

@TRUECOUNT allows you to print the number of batches printed of a label on that label.. To use @TRUECOUNT, create a Linked or Copied field and select @TRUECOUNT. The value of @TRUECOUNT is taken from the number of batches entered by the user on the print request screen.

NOTE: If you later lengthen the copy field, the copied field's length will also change. If you later erase the copy field, the copied field's data will be changed to a single 0 bar code.

Serialized

The data is read from a Serial File. If the data is changed by incrementing or decrementing the field, then the next available serial number will be rewritten to the Serial File.

Serial File Name

The path/name of the Serial File that contains the serial number.

Link

What is a Linked Field?

Link data from 2-12 fields. This function will allow you to tie together data from different fields on a format to be printed together in one large field.

Example: You wish to tie together a part number and a serial number into one field called 'IDENTNO'. To accomplish this you would use Link.

Number of Link Fields

The number of fields that will be combined to form this field. You can choose a number between 2 and 12.

Link Field n

The source of the data for each linked field you have defined. Choices of existing fields or special identifiers appear in the dialog box. You may also enter a value enclosed in double quotes. To link a bar code Function 1, Function 2, Function 3, or Function 4 character, select the appropriate function character from the list.

NOTE: If the field is a 'When Printed', 'Link' or 'Database' field, the bar code's interpretation will be displayed as a string of zeroes on the format display.

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Database

The information or "data" that will be used to fill this field on the format will come from a database file. You will be asked to specify the database file name and the name of the field containing the data or information to be used. A maximum of three different databases may be accessed in one format. For each database accessed, the name of the "search field" and an operator prompt will be required. You will only be required to supply a "search field" name and an operator prompt once for each new database used.

Before printing the format, the operator will be prompted for the value of the search field to be found. The software will search the database until a matching record is found. The matching record will then be used to supply data to all fields which specify the same database.

For a paragraph field, a database MEMO field can be used on the label by supplying the name of the MEMO field at the 'Data Field Name' prompt.

When the format is printed the operator will be prompted for the value of the search field to be found. The software will search the database until a matching record is found. The matching record will be used to supply data to all fields that specify the same database.

There is a method by which you can print out all of the records within a given database. Refer to the $ALL Function and Tutorial in Appendix C for further information.

Database System	Database File	Connection String	Table Name
Search Fields	Search Field Name	Operator Prompt Line	Data Field Name
Trim Trailing Blanks	Maximum Field Length	Typical Field Length	Prompt Number
	Design/Test Value	Variable Table	Variable Table Prompt

Database System
Enter the name of the Database System to use for accessing a database file. You can choose 'the software's (non-SQL) database' to connect to an internal dBase database or choose 'Other Database System' to retrieve data from other types of database files.

Database File
If the field is defined as being from 'the software's (non-SQL) database', then the name of that database must be entered. A list of the currently available databases will be displayed in the dialog box. If you have previously entered a database name, you can use the same name by pressing TAB.

Connection String

To connect to other types of database files, enter the appropriate connection string to the data source here or you can click the 'Prompt' button to be prompted to create the connection string. This string is created by first choosing a Database provider and then creating or choosing a connection to the database. How this is done will depend on your Database Provider.

Variable Table
With this option enable you will be able to choose which language table will provide the data to populate the field.
Only enable this option if you wish to print multi-lingual text from a database and you already setup the appropriate cross reference string.

Table Name
Enter the name of the TABLE containing the data to be printed. This item allows you to select the appropriate database file table.

Search Fields
The number of fields used to search for a specific record.

Search Field Name
The name of the database field that will be used in searching the database. When the operator enters a search value, the database will be searched to find the given value in the Search Field. The corresponding record will then be used to supply data.
This item must be entered once and may be entered as many as 3 times for each database used. If you have previously specified a field using the same database, this item will not appear unless the number of search fields you have specified was more than 1. The choices of field names appear in the dialog box.

Operator Prompt Line
Define the prompt you wish to appear at the time of printing. The prompt will be displayed above the data entry area for the field.

Variable Table Prompt
Define the variable table prompt you wish to appear at the print time. The prompt will be displayed above the data entry area for the field.

Data Field Name
The name of the database field from which this format field will be filled. When the database record to be used is found, data for this format field will be extracted from the field matching the Data Field Name. The field name choices are displayed in the dialog box.

Trim Trailing Blanks
Select Yes to suppress trailing blanks in an extracted database field. Select NO to use the field as it appears.

Maximum Field Length
Enter the maximum number of characters to extract from a database field. A value of 0 indicates that all characters should be used.

Typical Field Length
Enter the typical field length of a database field. This will allow fields to be displayed during label creation using this length. Note that if more characters exist than that specified for the typical length, all characters up to the maximum amount specified will be used. A value of 0 indicates that there is no typical field length.

Prompt Number
If the field's Source of Data is 'When Printed' or 'Database', the software provides the user with control over the order of data input prompts by allowing the user to specify/edit the order in which prompts will appear on the screen. This feature will allow flexibility in designing user input screens

Design/Test Value
Leave this entry BLANK to use the default screen and field width representation, or enter a string of characters which more closely represents typical printed data to help with label design.

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Box Field

Adding a Box Field

Adding a Box	Field Name	Comment	Horizontal Position
Vertical Position	Enable Printing	Field Width	Horizontal Thickness
Vertical Thickness	Shape	Fill Pattern	Number of Sides
Gray Level	Polygons	Outlined	Field Height

Adding a Box

To add a box field, click on the **Add Box Field** icon located on the Drawing Toolbar or choose **Insert | Box Field** from the menu bar.

The following message will appear:

Press and hold the mouse button or press ENTER when done.

You should now move the pointer to the proper position on the format. You may actually move to either the upper left corner or any of the other 3 corners of the area to be occupied by the box. When the pointer is properly positioned, press ENTER.

You may now move to the opposite corner of the area for the box. A rectangle will display the area as you use the mouse button or the arrow keys to expand or contract the area. When you have expanded the rectangle to the proper size, release the mouse button or press ENTER.

Now you will be prompted to expand the box's borders to the proper thickness. The following message will appear:

ADJUST SIDES TO PROPER THICKNESS

Drag with the mouse and release button when done,

or use the arrow keys and press ENTER when done.

The left arrow will decrease vertical sides and the up arrow key will decrease horizontal sides. Pressing the arrow keys while holding down the shift key, will result in movements of .10 inches or 1.0mm.

When the box's borders are the proper thickness, press ENTER. The box will be added to the format and displayed.

For printers that support shaded boxes or polygons, you will be presented with the Create Box Field Specification screen. Each of the specification screen items are described below:

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the vertical position of the field.

Comment

Enter a comment for this field.

Shape

You will be presented with an on-screen list of available shapes from which to choose. The available choices for box fields are:

- Rectangle
- Solid Rectangle
- Rounded Rectangle
- Solid Rounded Rectangle
- Regular Polygon
- Solid Polygon

The choices vary based on the printer chosen.

Number of Sides

You will be presented with an on-screen list of available choices from which to define the number of sides the polygon should have. A polygon can be designed to have any number of sides from 3 to 12.

This screen item only appears if the shape chosen is Regular Polygon or Solid Polygon.

Fill Pattern

You will be presented with an on-screen list of available fill patterns from which to choose. The available choices are:

- Solid
- Down Diagonal
- Up Diagonal
- Grid
- Diamond
- Horizontal lines
- Vertical Lines
- Dots
- Windows Wallpaper

The choices vary based on the printer and shape chosen.

Gray Level

You will be presented with an on-screen list of available gray level shading options.

This option appears when a Solid fill pattern is chosen for shapes other than Regular polygon or Solid Polygon. The choices for gray level shading vary based on the printer chosen.

Once you have finished entering the specification data for the field, the field can be placed on the format.

Polygons

For placing a polygon field on the format, follow these steps:

The following message will appear:

Move pointer to the CENTER of the polygon. Press ENTER or press and hold mouse button.

You may now move the pointer to increase or decrease the polygon size as well as to change the rotation of the polygon. The polygon will appear on the display as you use the mouse or arrow keys to expand or contract the area.

The following message will appear:

EXPAND BOX to proper size. Use arrow keys then ENTER or drag with mouse.

When you have expanded the polygon to the proper size, release the mouse button or press ENTER. If the shape chosen is Regular Polygon, you will also be prompted to expand the borders of the polygon to the proper thickness. The following message will appear:

Adjust sides to proper thickness. Use arrows then Enter or drag with mouse.

The left arrow will decrease the thickness of the polygon and the right arrow will increase the thickness of the polygon. When the polygon is at the proper thickness, press Enter. The polygon will be added to the format and displayed on the screen.

Enable Printing

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Field Width

Enter the width of the field in inches and hundredths of inches.

Horizontal Thickness

Enter the Horizontal Thickness of the box in inches and hundredths of inches.

Vertical Thickness

Enter the Vertical Thickness of the box in inches and hundredths of inches.

Outlined

Select Yes to outline the shape with a solid line

Field Height

Enter the Height of the field in inches and hundredths of inches.

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Circle or Ellipse Field

Adding a Circle or Ellipse Field

Adding a Circle or Ellipse	Field Name	Comment	Horizontal Position
Vertical Position	Enable Printing	Field Width	Field Height
Line Thickness	Shape	Fill Pattern	Gray Level

Adding a Circle or Ellipse

To add a circle or ellipse field, click on the **Add Circle or Ellipse Field** icon located on the Drawing Toolbar or click **Insert | Circle or Ellipse Field** from the menu bar.

You will be instructed to define the location and size of the circle or ellipse then, place it on the format.

You will need to move the pointer to increase or decrease the size of the circle or ellipse. The circle will appear on the display as you use the mouse or arrow keys to expand or contract the area of the circle. When you have expanded the circle to the proper size, release the mouse button or press ENTER.

For printers that support outlined circles and ellipses, you have the ability to adjust the thickness of the circle or ellipse border.

The left arrow will increase the thickness of the circle or ellipse and the right arrow will decrease the thickness of the circle or ellipse.

When you have successfully placed and sized the area for the circle or ellipse, press ENTER. The circle or ellipse will be added to the format and displayed.

If Circles and/or Ellipses are not supported for the printer, the menu option will be grayed.

Each of the Circle/Ellipse data field items are described below.

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter a comment for this field.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the horizontal position of the field

Enable Printing

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Field Width

Enter the Width of the field in inches and hundredths of inches.

Field Height

Enter the Height of the field in inches and hundredths of inches.

Line Thickness

Enter the thickness of the field in inches and hundredths of inches.

Shape

Please select one of the following variations. Available choices are:

- Circle (Outlined Circle)
- Disc (Solid Circle)
- Ellipse (Outlined Ellipse)
- Solid Ellipse

Fill Pattern

You will be presented with an on-screen list of available fill patterns from which to choose. The available choices are:

- Solid
- Down Diagonal
- Up Diagonal
- Grid
- Diamond
- Horizontal lines
- Vertical Lines
- Dots
- Windows Wallpaper

The choices vary based on the printer chosen.

Gray Level

You will be presented with an on-screen list of available gray level shading options. This option appears when a Solid fill pattern is chosen.

The choices for gray level shading vary based on the printer chosen.

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Line Field

Adding a Line Field

Adding a Line Field	Field Name	Comment	Horizontal Position
Vertical Position	Enable Printing	Orientation Angle	Line Thickness

Line Length	Shape	Fill Pattern	Gray Level

Adding a Line Field

To add a line field click on the **Add Line Field** icon located on the Drawing toolbar or choose **Insert | Line Field** from the menu bar.

The line's width can be as large as the format width. The line's height can be as large as the format height.

You can now use the mouse button to move the pointer to the proper position on the format or you can use the arrow keys. Since a line is treated as though it is a rectangle, you may actually move to either the upper left corner or any of the other three corners of the area to be occupied by the line. When the pointer is properly positioned, the following message will now appear:

Move to LOWER RIGHT CORNER of the line.

Press and hold the mouse button or press ENTER when done.

You can now use the mouse button to move to the opposite corner of the area for the line or you can use the arrow keys. A solid rectangle will display the area as you use the arrow keys to expand or contract the area. When you have expanded the rectangle to the proper size, release the mouse button or press ENTER.

The completed line will be added to the format and shown on the format display.

Angled Lines are supported on some printers.

For printers that support shaded lines, you will be presented with the Create Line Field Specification screen. Each of the specification screen items are described below:

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter a comment for this field.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the vertical position of the field.

Enable Printing

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Orientation Angle

Enter the Angle in degrees and tenths of degrees.

Line Thickness

If you would like to adjust the thickness of a line after you have already placed the line on the format, this parameter permits you to enter a value for the line thickness.

Line Length

Enter the length of the line in inches or millimeters.

Shape

You will be presented with an on-screen list of available shapes from which to choose. The available choices for line fields are:

- Solid Rectangle
- Solid Rounded Rectangle
- Arrow
- Double Arrow
- Triangle

The choices vary based on the printer chosen.

Fill Pattern

You will be presented with an on-screen list of available fill patterns from which to choose. The available choices are:

- Solid
- Down Diagonal
- Up Diagonal

- Grid
- Diamond
- Horizontal lines
- Vertical Lines
- Dots
- Windows Wallpaper

The choices vary based on the printer chosen.

Gray Level

You will be presented with an on-screen list of available gray level shading. This option appears when a **Solid fill** pattern is chosen.

The choices for gray level shading vary based on the printer chosen.

Once you have finished entering the specification data for the field, the field can be placed on the format.

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Picture Field

Adding a Picture Field

Adding a Picture Field	Horizontal Position	Vertical Position	Field Name
Comment	Field Width	Field Height	Source of Data
Field Direction	Field Contrast	Maintain Aspect Ratio	Enable Printing
Field Color			

Adding a Picture Field

To add a picture field, click on the **Add Picture Field** icon located on the Drawing Toolbar or choose **Insert | Picture Field** from the menu bar.

NOTE: Over 40 of the most popular graphic types are supported.

Pictures can be created using Microsoft Paintbrush®, Adobe Photoshop®, Jasc Paint Shop Pro® and many other graphics applications. Files with the .EPS extension can only be included on formats designed for a Postscript printer.

Color pictures can be printed in color to a color printer from within the software under the following criteria. If your image has no color information accompanying it, then the software can not use the image. In this case, the image will not print properly. If your image has color information accompanying it, then the software does not have a problem printing the image. For example, if your image was saved as a 16.7 million color image, the image has no color information accompanying it. If the image was saved as a 256 color image, the image will have color information accompanying it.

You are now presented with the picture specification screen. Once all specification data is entered you will be returned to the Edit screen. You will be instructed to define the size of the picture. You can use the mouse or the arrow keys. Placing the picture field on the format display is similar to the process of placing a box field on the format.

Use the arrow keys or drag with mouse.

When you have successfully placed and sized the area for the picture, the software will read in the picture and add it to the format. It will be displayed in the proper size.

NOTE: If this field's Source of Data is When Printed or Database, the area for the picture will show as a checker-board on the format.

Each of the picture data items are described below.

Horizontal Position

Enter the Horizontal Position of the field.

Vertical Position

Enter the Vertical Position of the field.

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter an optional comment for the field. Used in reports.

Field Width

Enter the Width of the field in inches and hundredths of inches.

Field Height

Enter the Height of the field in inches and hundredths of inches.

Source of Data

The data for this field can be one of the following:

- Fixed
- When Printed
- Database

Field Direction

The field can be printed in any of the 4 following orientations:

- Normal (left to right)
- Bottom to top
- Upside down (right to left)
- Top to bottom

An example is shown of each orientation in the box at the side of the display screen when this item is being entered.

Field Contrast

The field can be printed normal (black print on white background) or reverse (white print on black background).

Maintain Aspect Ratio

Selecting Yes for this option will allow pictures to maintain their original aspect ratio. Selecting No will allow pictures to be stretched to fill the available defined field size.

Enable Printing

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Field Color

When designing a label for a COLOR printer, you can add a color to a monochrome picture. Select a color from the available choices in the directions. When the picture field is printed, the picture will be printed in the selected color.

This item will only appear if the selected picture was not originally saved as a color graphic.

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Source of Data

Fixed

Fixed Data	Edit	Control Characters

Fixed Data
Enter the exact data that you wish to be printed in the field.

Edit
Click Edit to display a text editor.

Control Characters
Choose from a list of predefined characters to be included in the data of defined fields.

When Printed

What is a When Printed field?

The field data is variable. When you print the format, you will be prompted to fill in the value of the field. It can be changed for each set of formats that are printed. For a text field, your input may come from the keyboard, a serial port, a Command File or a wedge type bar code scanner. For a paragraph field, you will type in the paragraph at the time of printing. With the exception of TAB key usage, the paragraph will be printed exactly as typed. To force a new line break, press CTRL-ENTER simultaneously; otherwise, the text will automatically be arranged into lines when printed (word wrap). The following prompts will apply:

Operator Prompt Line	Prompt Repeats	Prompt Number	Data Checking
Maximum Field Length	Allow Blanks	Selection List	

Operator Prompt Line
Define the prompt you wish to appear at the time of printing. The prompt will be displayed above the data entry area for the field.

Prompt Repeats
Select to enable the printer to prompt for this field on every label. This only applies when downloading to a memory card in the printer, and when the printer prompts for the label quantity.

Prompt Number
The order in which you wish the prompt to appear on the operator input screen. This option will appear if there is more than 1 prompted field defined for the format.

Data Checking
An indication of the type of validation to be done on operator entry for a 'When Printed' field. The types of Data Checking include:

- No Validation
- Numeric
- Alphabetic
- Alphanumeric
- Upper Case Characters
- Upper Case Alphabetic
- Upper Case Alphanumeric
- Fixed List of Values

Maximum Field Length
If you define the field as 'When Printed', you must supply the maximum length of the field in character positions.

Allow Blanks
An indication of the allowable INCOMPLETE operator input for a 'When Printed' field. The choices are as follows:

- Fully or Partially Blank
- Partially Blank
- Fully Blank
- No Blanks Allowed

Selection List
Enter a list of values which the operator can choose from. The values that you type in will appear as choices on the Print screen. Each value must be separated

by a space. Short phrases must be enclosed in double quotes. To advance to a new line, press CTRL+ENTER. For example, choices are RED GREEN BLUE.

To display this selection list, click on the down arrow next to the field input box on the data input screen within the Print screen.

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Database

The information or "data" that will be used to fill this field on the format will come from a database file. You will be asked to specify the database file name and the name of the field containing the data or information to be used. A maximum of three different databases may be accessed in one format. For each database accessed, the name of the "search field" and an operator prompt will be required. You will only be required to supply a "search field" name and an operator prompt once for each new database used.

Before printing the format, the operator will be prompted for the value of the search field to be found. The software will search the database until a matching record is found. The matching record will then be used to supply data to all fields which specify the same database.

For a paragraph field, a database MEMO field can be used on the label by supplying the name of the MEMO field at the 'Data Field Name' prompt.

When the format is printed the operator will be prompted for the value of the search field to be found. The software will search the database until a matching record is found. The matching record will be used to supply data to all fields that specify the same database.

There is a method by which you can print out all of the records within a given database. Refer to the $ALL Function and Tutorial in Appendix C for further information.

Database System	Database File	Connection String	Table Name
Search Fields	Search Field Name	Operator Prompt Line	Data Field Name
Trim Trailing Blanks	Maximum Field Length	Typical Field Length	Prompt Number
	Design/Test Value	Variable Table	Variable Table Prompt

Database System
Enter the name of the Database System to use for accessing a database file.

You can choose 'the software's (non-SQL) database' to connect to an internal dBase database or choose 'Other Database System' to retrieve data from other types of database files.

Database File
If the field is defined as being from 'the software's (non-SQL) database', then the name of that database must be entered. A list of the currently available databases will be displayed in the dialog box. If you have previously entered a database name, you can use the same name by pressing TAB.

Connection String
To connect to other types of database files, enter the appropriate connection string to the data source here or you can click the 'Prompt' button to be prompted to create the connection string. This string is created by first choosing a Database provider and then creating or choosing a connection to the database. How this is done will depend on your Database Provider.

Variable Table
With this option enable you will be able to choose which language table will provide the data to populate the field.
Only enable this option if you wish to print multi-lingual text from a database and you already setup the appropriate cross reference string.

Table Name
Enter the name of the TABLE containing the data to be printed. This item allows you to select the appropriate database file table.

Search Fields
The number of fields used to search for a specific record.

Search Field Name
The name of the database field that will be used in searching the database. When the operator enters a search value, the database will be searched to find the given value in the Search Field. The corresponding record will then be used to supply data.
This item must be entered once and may be entered as many as 3 times for each database used. If you have previously specified a field using the same database, this item will not appear unless the number of search fields you have specified was more than 1. The choices of field names appear in the dialog box.

Operator Prompt Line
Define the prompt you wish to appear at the time of printing. The prompt will be displayed above the data entry area for the field.

Variable Table Prompt

Define the variable table prompt you wish to appear at the print time. The prompt will be displayed above the data entry area for the field.

Data Field Name
The name of the database field from which this format field will be filled. When the database record to be used is found, data for this format field will be extracted from the field matching the Data Field Name. The field name choices are displayed in the dialog box.

Trim Trailing Blanks
Select Yes to suppress trailing blanks in an extracted database field. Select NO to use the field as it appears.

Maximum Field Length
Enter the maximum number of characters to extract from a database field. A value of 0 indicates that all characters should be used.

Typical Field Length
Enter the typical field length of a database field. This will allow fields to be displayed during label creation using this length. Note that if more characters exist than that specified for the typical length, all characters up to the maximum amount specified will be used. A value of 0 indicates that there is no typical field length.

Prompt Number
If the field's Source of Data is 'When Printed' or 'Database', the software provides the user with control over the order of data input prompts by allowing the user to specify/edit the order in which prompts will appear on the screen. This feature will allow flexibility in designing user input screens

Design/Test Value
Leave this entry BLANK to use the default screen and field width representation, or enter a string of characters which more closely represents typical printed data to help with label design.

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Text Field

Adding a Text or Paragraph Field

Adding a Text or Paragraph Field	Horizontal Position	Vertical Position	Field Name
Comment	Typeface	Width Magnification	Height Magnification
Character Height	Character Width	Maximum Lines	Field Contrast

Field Direction	Source of Data	Special Formatting	Report Data
Increment/Decrement Field	Add-on Characters	Enable Printing	Font Style
Font Size	Date Format	Format String	Non-Numeric Data
Text Color	Position Per Line	Interline Spacing	Reverse Field Adjustment
Letter Orientation	Character Spacing	Character Formatting	Special Effect Character
Center/Justify	Type of Increment	Increment/Decrement Sequence	Data Checking
Change Amount	Background Color	Print Criterion	Selection List
Update Database	Design/Test Value	Script	Maximum Field Length
Field Fill	Force Fit	Font Point Size	
Increment/Decrement Maximum	Increment/Decrement Minimum		

Adding a Text or Paragraph Field

To add a new text or paragraph field to the format, click the **Add Text Field** icon on the Drawing Toolbar or choose **Insert | Text Field** from the menu bar.

Horizontal Position

Enter the horizontal position of the field.

Vertical Position

Enter the vertical position of the field.

Field Name

A name to associate with the field. Can be up to 32 characters long. The name is necessary if you will be recording the value of this field in a format tracking report, copying data from this field into another field, using this field's data in a Linked Field or filling this field using the Command File facility.

Comment

Enter a comment for the field.

Typeface

You will be presented with an on-screen list of available character sets from which to choose the base character for your text field. A thumbnail preview will be given for all TrueType fonts on the Text field parameters screen while editing this prompt. If the source of data is fixed, the data will be shown on the parameters screen in the True Type font selected. For when printed fields, the data will be shown in the True Type font selected at print time when it is entered.

NOTE: When defining a text field that uses a TrueType font, the Character Height is the actual cell size of a character. The cell size is defined to include the character, international ascenders and lower case descenders.

For example: If you type a Character Height of 1.00", the actual character size that is printed will be .70". Specifying a Character Height of 1.33" will print a character of 1" in height.

Width Magnification

This function is used to specify the width of the characters.

Height Magnification

This function is used to specify the height of the characters

Script

Select the Script/Character Set to be used with the chosen font.

Font Point Size

When using True Type fonts you may click the "Change Font Point Size" Button and select a point size for the text field. The Character Height is adjusted automatically and the Character Width is set to "0" to make it proportional to the height. Conversely, if the value for Character Height is changed then the value for Font Point Size will be automatically adjusted.

Character Height

Indicate the character height in inches and hundredths of inches if measurements are in English. Indicate the character height in millimeters and tenths of millimeters if measurements are in Metric.

Character Width

Indicate the character width in inches and hundredths of inches if measurements are in English. Indicate the character width in millimeters and tenths of millimeters if measurements are in Metric.

When using TrueType fonts, you may specify a character width of "0". This will make the width proportional to the height.

Maximum Lines

This function allows you to specify a single line text field or a multiple line text (paragraph) field. Enter 1 for a single line. For a paragraph field, enter the number of lines you want the paragraph to occupy. A maximum of 99 lines can be specified for a paragraph field.

Field Contrast

- Normal - Field will appear black on white background.
- Reverse - Field will appear white on black background

Field Direction

When the Letter Orientation is Normal, the field can be printed in any of the following orientations on the format.

- Normal (left to right)
- Bottom to top
- Upside down (right to left)
- Top to bottom
- Slanted
- Circular Arc

When the Letter Orientation is Stacked, the field can be printed in any of the following stacked orientations:

- Stacked Right
- Stacked Up
- Stacked Left
- Stacked Down
- Slanted

Stacked fields are fields where characters are printed below one another instead of next to one another. This option varies depending on the printer chosen.

The software shows an example of each orientation in the box of the display when this item is being entered.

You should now rotate the box to the appropriate angle. As you move the box, the degree of the slant appears in the coordinates box on the lower right side of the screen. When you have successfully placed and sized the area for the circular arc field, release the mouse button or press ENTER.

When selecting a field direction of Circular Arc, the field is placed on the label then expanded in an arc. Once all specification data is entered, you will be returned to Edit screen. You will be instructed to define the location, angle and the shape of the arc of the field.

You should now rotate the box to the appropriate angle. As you move the box, the degree of the slant appears in the coordinates box on the lower right side of the screen.

You will now be prompted to define the shape of the arc of the field.

Adjust SHAPE. Use arrows, then ENTER or drag with mouse.

Moving the pointer towards the top of screen will make the top of the letters curve more.

Moving the pointer towards the bottom of the screen will make the bottom of the letter curve more. When you have successfully placed and sized the area for the circular arc field, release the mouse button or press ENTER.

Source of Data

The data for the field can be one of the following:

Fixed	Link	Arithmetic
When Printed	Serialized	External File
Database	Print Date	Name When Printed
Copied	Time	Database Indirect

Special Formatting

This function allows for specialized formatting of data. Following are the available options:

- No special formatting
- Short Date

  Short Date
  Example: 10-JAN-99

- Long Date

Long Date

Example: January 10, 1999

- Julian Date

  Julian Date

  Example: 99010

- Custom Date

  Custom Date

  Allows you to create your own custom format for the date.

  MM - Numeric Month

  mm - Numeric Month with suppressed zero

  MMM - Abbreviated Name of Month

  MMMMMMMMM - Month Name

  DD - 2 Digit Day of Month

  DDD - 3 Digit Day of Year

  YY - 2 Digit Year

  Y - 1 Digit Year

  WW - 2 Digit Week Number within Year

  WWW - 3 Letter Day of Week

  WWWWWWWWW - Day of Week Name

  NOTE: Use mmm for jan or Mmm for Jan, etc.

  Example: MM.DD.YY

- Custom Spacing

  Custom Spacing

  This option allows for compliance with various industry standard formats for bar code human readable interpretations. You may use a character string of 9's to represent positions to be filled by data. The allowable separators are any special characters you desire for your format, including spaces.

  Example: (999) 999-9999 for a phone number, demonstrating that separators other than the space character can be used (i.e. dash, parentheses).

  This meets the needs of different standards such as NDC, which requires dashes and spaces, or UCC/EAN 128, which requires parentheses and spaces.

- Custom Numeric/Amount Format

  Custom Numeric Amount Format

  This option allows you to format a string of numeric data. If you would like to suppress the printing of leading zeroes or only print specific parts of the numeric data, such as the first 3 digits, you can use a character string of 9's, X's or Z's to represent positions to be filled by data.

  Example: ZZZ9 represents a numeric data string with suppressed leading zeroes.

- RPS Interpretation with Checksum

  RPS Interpretation with Checksum

  This option allows you to create the Human Readable interpretation for an RPS bar code.

  To properly create an RPS bar code with interpretation, refer to your RPS Bar Code Specifications.

- Price (.NN or N.NN)

  Price (.NN or N.NN)

  If selected, the fixed data will be printed in this format.

  Displayed is a price with decimal points, but no currency sign(s).

- Price (NN¢ or N.NN)

  Price (NN¢ or N.NN)

  If selected, the fixed data will be printed in this format.

  No decimal point for fixed data of 2 characters or less.

- Price (.NN¢ or $N.NN)

  Price (.NN¢ or $N.NN)

  If selected, the fixed data will be printed in this format.

  Displayed with decimal points and currency signs.

- Price ($.NN or $N.NN)

  Price ($.NN or $N.NN)

  If selected, the fixed data will be printed in this format.

  Displayed with decimal points and

  the dollar sign.

- Unit Price (NN.N¢ or $N.NN)

Unit Price (NN.N¢ or $N.NN)

If selected, the fixed data will be printed in this format.

Displayed is a unit price.

- Price Header (N/ if N > 1)

  Price Header (N/ if N > 1)

  If selected, the fixed data will be printed in this format.

  For example:

  If items sell 3 for 2.00, choosing this option will allow the price to be printed as 3/2.00.

- Price Header (N FOR if N > 1)

  Price Header (N FOR if N > 1)

  If selected, the fixed data will be printed in this format.

  For example:

  If items sell 3 for 2.00, choosing this option will allow the price to be printed as 3 FOR 2.00.

Report Data

To record the value of this field whenever the format is printed, select Yes. Otherwise, Select No.

The data in this field will be stored each time the format is printed. If no fields are specified with this option, no format tracking data file will be created.

Add-On Characters

You may specify a character string of up to 10 characters to always be appended to the front and/or end of the bar code. These characters will always be encoded in the bar code. The following options are available:

- None
- Header
- Trailer
- BOTH Header and Trailer

Enable Printing

This selection will allow you to define a field from any of the available sources of data and not have that field printed on the format.

Example: Your customer's part number gets printed on the format, but yours does not; however you want your part number included in the report that is generated. You need to generate a field defining your part number, disable the printing and enable the report function.

You could also use this function to put a message on the screen for your operator. Such as, the color or size stock that this format should be printed on.

Select Yes to print the field on the format. Select No to display the field on the format, but do not print the field. Select Conditional to specify a print criterion for the field.

Font Style

You will be presented with an on-screen list of available font styles for the chosen typeface.

Font Size

You will be presented with an on-screen list of available font sizes for the chosen typeface.

Date Format

A special string of characters that will represent how the date should be formatted. The valid characters for the string appear in the Directions Box.

Format String

A character string in which 9's represent how the data should be formatted. Other valid characters for the string include, parenthesis, periods, commas, hyphens and the space character.

If you had previously selected Custom Numeric/Amount for your Special Formatting option, you can type in a sequence of 9's, X's or Z's to represent positions (or place holders) to be filled by data.

The 9 place holder should be used to always print a digit. For example, if the data is:

000123456

and you want to print all digits, enter the following for the *Format String* screen item:

999999999

The data that will print will be:

000123456

The **Z** place holder should be used if you want to suppress a variable number of leading zeroes. In other words, if the digit is a leading zero, the zero will not print. If the digit is not a zero, the digit will print.

Fixed Data: For example, if the data is:

000123456

and you want to suppress the 3 leading zeroes, enter the following for the *Format String* screen item:

ZZZ999999

The data that will print will be:

123456

This example will suppress only the first three leading zeroes. If there are more than three leading zeroes in the data stream, only the first three leading zeroes will be suppressed.

Variable Data: When the data is unknown, such as database input or operator input, and you want to suppress all leading zeroes, it is best to enter the following for the *Format String* screen item:

ZZZZZZZZ9

Entering the format string this way will always suppress the leading zeroes no matter what the actual data is.

For example, if the data is:

000123456

The following will print:

123456

If the data is:

000000123

The following will print:

123

The **X** place holder should be used to always suppress a digit in a specific position. For example, if the data is:

123400056

and you want to print only the last six digits, enter the following for the *Format String* screen item:

XXX999999

The data that will print will be:

400056

The number of place holder characters specified for *Format String* must match the number of characters in the data string:

a) If data is coming from a database or if the data is When Printed and the maximum field length is 10, there should be 10 characters specified in the *Format String:*

ZZZZZZZZZ9

will suppress any leading zeroes.

For example, if the data is:

0000007890

The characters following will print:

7890

If the data is:

0034567890

The characters following will print:

34567890

Non-Numeric Data

If there are any non-numeric characters in the data, the non-numeric characters will automatically be ignored. For example, if the data is 01234B6,

typing: ZZZZZZ9

will suppress any leading zeroes; however, since there are non-numeric characters, the actual data that will print will be 12346.

Text Color

Choose a color for the text field. For TrueType fonts, you may click the "Custom" button to create a custom color for the text field. Printer internal fonts will only allow a choice of 16 colors. This option will only appear for the TEC 416 printer or color Windows printers.

Positions Per Line

This function allows you to define the number of characters each line will have (maximum of 300 character positions).

NOTE: If the paragraph data is larger than the area that you defined on the format, and all characters cannot fit, the following message will be displayed: **WARNING**: Paragraph data exceeds the defined number of lines and positions per line. Some data will be omitted.

Interline Spacing

This function allows you to define the distance between each line, in inches and hundredths of inches. Enter 0 for default spacing.

Reverse Field Adjustment

This option is used to set the size of the reverse area surrounding the field. Enter a value in hundredths of an inch to define the size of the reverse box that surrounds the text.

This option is only available when using a Windows Printer Driver.

Letter Orientation

Choose the orientation of the characters in relation to the direction of the text. All letters in the field can be printed in a Normal or a Stacked orientation. The Stacked orientation only appears if the chosen typeface is a TrueType font.

Character Spacing

Enter the vertical distance between characters, from the baseline of the first character to the baseline of the next character, in inches. Enter 0 for default spacing.

The Character Spacing option is only available if the chosen typeface is a TrueType font and the letter orientation is Stacked.

Character Formatting

If you want to specially format parts of the text field, select one or more alternate styles. Enter blank for no special formatting of characters.

The purpose of Character Formatting is to apply special effects to text within a paragraph. Special effects include **bold**, *italic*, underline , superscript and subscript. You have the ability to select a single special effect or multiple effects (up to 4). For each special effect selected, you are given an additional screen item prompt.

The Character Formatting screen item appears on the text specification screen when designing paragraph fields in which the chosen typeface is a TrueType font.

Special Effect Character

Enter a toggle character for the special effect. The toggle character will become a non-printing character which can be used to bracket words or phrases that you want to appear in the special effect style.

For example, to highlight a word to be underlined, you can use the ! (exclamation point) as the toggle character. After the toggle character is defined, the ! (exclamation point) character can be placed before and after the word or phrase that you want underlined.

The special effect toggle character can also be embedded in an external file or a database memo field. For When Printed paragraph fields, the toggle character can be used when entering data on the prompt line.

Center/Justify

This option will cause the character string to be centered within the defined print area. That is, if the contents of the field contain less characters than the maximum, the characters will be moved so they are centered in the field's area.

Other options available are: Right Justify, Left Justify and Full Justify. Full Justify will adjust the spacing between words so that text aligns with both the left and right margins. Options may vary based on the printer used.

Increment/Decrement Field

The following options are available:

- Increment
- Decrement
- Constant

If the field is Copied, the increment or decrement specified for the copy field will apply to the copied field. If the field contains more than 10 numbers, the increment or decrement will apply only to the last 10 numbers.

Increment/Decrement Sequence

The custom incrementation option allows you to define a specific sequence of characters to increment or decrement. Valid characters are the digits 0-9 and the letters A-Z.

See Examples

NOTE: Incrementing or Decrementing starts from the right side of the field value and increments or decrements toward the left.

Type of Increment

The type of incrementation to be done on the field. Either Numeric, Alphabetic, Alphanumeric, Hexadecimal, Octal, or Custom.

Change Amount

The numerical amount by which to increment or decrement the field.

Increment/Decrement Maximum

Enter the maximum value the field can reach before rolling over to the minimum value.

NOTE: This option requires the computer to do the field incrementation and not the printer. The computer will send the labels one at a time to the printer.

Increment/Decrement Minimum

Enter the value the field should be reset to after reaching the maximum value.

NOTE: This option requires the computer to do the field incrementation and not the printer. The computer will send the labels one at a time to the printer.

Update Database

Select Yes to have the database updated after each job. This will reflect the last value of the incremented/decremented field. Select No to leave the database field unchanged.

Background Color

Select the background color for the text field. This option will only appear for the TEC 416 printer or color Windows printers.

Data Checking

Please indicate whether data type validation should be performed on operator input. Choices are:

- No Validation
- Numeric
- Alphabetic
- Alphanumeric
- Date (M/D/Y)
- Upper Case Characters
- Upper Case Alphabetic
- Upper Case Alphanumeric
- Fixed List of Values

Selection List

Enter a list of values which the operator can choose from. The values that you type in will appear as choices on the Print screen. Each value must be separated by a space. Short phrases must be enclosed in double quotes. To advance to a new line, press CTRL+ENTER. For example, choices are RED GREEN BLUE.

To display this selection list, click on the down arrow next to the field input box on the data input screen within the Print screen.

Maximum Field Length

Enter the maximum number of characters in the field.

Design/Test Value

This option allows users to specify either a narrower character width or the default character width of a text field by typing in a string of characters that more precisely represents the actual printed data.

For this option, press TAB to leave this entry BLANK or type in a string of characters which represents a narrower character width for the field. Leaving this entry blank designates that you want to use the default screen and field width representation. Typing in a string of characters allows you to more precisely represent the actual printed data which can allow more characters to define on a line.

Field Fill

With this option set to Yes, if less characters are inputted than specified for the maximum field length, the characters will be bigger in both height and width. Select No for normal operation.

Force Fit

When designing paragraph or Multi-source (block) text fields, you can enable the "Force Fit" option. This option will allow the font size to shrink or grow so that the text best fills the available field area. Once this option is enabled, you will be prompted to enter the upper and lower limits for the text height. The upper limit is determined by the value entered in the "Max. Fit Height" prompt, the text will grow no larger than this value. The lower limit is determined by the value entered in the "Min. Fit Height" prompt, the text will not shrink smaller than this value. The width of the characters is changed proportionally to the change in height. This option is useful when designing ingredient labels to make the best use of the available label space.

Print Criterion

Enter the condition for which this field should be printed. The condition entered is an expression that can contain currently defined field names, numeric or alphabetic constants, mathematic operators, comparison operators or logical operators. Numeric or alphabetic constants need to be enclosed in double quotes.

For example, you can create a text field that has a fixed value of 'SALE'. You only want this field to print when the 'PRICE' field is less than 6.99. You can select Conditional Print for the field named 'SALE' and type the following expression in for Print Criterion: **PRICE < 6.99.** Where: **PRICE** is the field name you want to compare. < is the comparison operator LESS THAN and 6.99 is the value to match. The 'SALE' field will now only print when the value of the PRICE field is less than 6.99.

Another example would be a text field with a fixed value of "Frozen". You only want this field to print when another field called 'CONDITION' is equal to "True". Type **CONDITION = "True"** in for Print Criterion. Any time the CONDITION field is equal to "True" the "Frozen" field will print. If CONDITION is empty or equal to something other than "True" then "Frozen" will NOT print.

The **LIKE** comparison operator allows you to perform pattern matching. You can substitute a percent or an underscore character for a whole word, a group of characters or a single character. A **%** (percent sign) represents a whole word or any GROUP of characters in the data. The _ (underscore) represents any SINGLE character in the data.

For example, if you need to print all records where the UPC code begins with the number 6 and ends with any character, type the following expression: **UPCCODE LIKE 6%**

Where:

UPCCODE is the field name in your database.

LIKE is the comparison operator LIKE.

6 is the starting character of the UPC code to match.

% designates the remaining characters in the UPC code.

The database will be searched for all records which begin with the number 6 and only those records will be printed.

If you need to print all records where an Item number begins with A and ends with a 5, type the following expression: **ITEMNUM LIKE A_5**

Where:

ITEMNUM is the field name in your database. The length of ITEMNUM is 3.

LIKE is the comparison operator LIKE.

A is the starting character of the ITEMNUM to match.

_ is a substitute for any single character.

5 is the last character of the ITEMNUM to match.

The database will be searched for all records where the ITEMNUM is 3 characters in length, begins with an A, ends with a 5 and has any character in the second position. Only those records will be printed.

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Source Data

Fixed

Fixed Data	Edit	Control Characters

Fixed Data
Enter the exact data that you wish to be printed in the field.

Edit
Click Edit to display a text editor.

Control Characters
Choose from a list of predefined characters to be included in the data of defined fields.

When Printed

What is a When Printed field?

The field data is variable. When you print the format, you will be prompted to fill in the value of the field. It can be changed for each set of formats that are printed. For a text field, your input may come from the keyboard, a serial port, a Command File or a wedge type bar code scanner. For a paragraph field, you will type in the paragraph at the time of printing. With the exception of TAB key usage, the paragraph will be printed exactly as typed. To force a new line break, press CTRL-ENTER simultaneously; otherwise, the text will automatically be arranged into lines when printed (word wrap). The following prompts will apply:

Operator Prompt Line	Prompt Repeats	Prompt Number	Data Checking
Maximum Field Length	Allow Blanks	Selection List	

Operator Prompt Line

Define the prompt you wish to appear at the time of printing. The prompt will be displayed above the data entry area for the field.

Prompt Repeats
Select to enable the printer to prompt for this field on every label. This only applies when downloading to a memory card in the printer, and when the printer prompts for the label quantity.

Prompt Number
The order in which you wish the prompt to appear on the operator input screen. This option will appear if there is more than 1 prompted field defined for the format.

Data Checking
An indication of the type of validation to be done on operator entry for a 'When Printed' field. The types of Data Checking include:

- No Validation
- Numeric
- Alphabetic
- Alphanumeric
- Upper Case Characters
- Upper Case Alphabetic
- Upper Case Alphanumeric
- Fixed List of Values

Maximum Field Length
If you define the field as 'When Printed', you must supply the maximum length of the field in character positions.

Allow Blanks
An indication of the allowable INCOMPLETE operator input for a 'When Printed' field. The choices are as follows:

- Fully or Partially Blank
- Partially Blank
- Fully Blank
- No Blanks Allowed

Selection List
Enter a list of values which the operator can choose from. The values that you type in will appear as choices on the Print screen. Each value must be separated by a space. Short phrases must be enclosed in double quotes. To advance to a new line, press CTRL+ENTER. For example, choices are RED GREEN BLUE.

To display this selection list, click on the down arrow next to the field input box on the data input screen within the Print screen.

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Database

The information or "data" that will be used to fill this field on the format will come from a database file. You will be asked to specify the database file name and the name of the field containing the data or information to be used. A maximum of three different databases may be accessed in one format. For each database accessed, the name of the "search field" and an operator prompt will be required. You will only be required to supply a "search field" name and an operator prompt once for each new database used.

Before printing the format, the operator will be prompted for the value of the search field to be found. The software will search the database until a matching record is found. The matching record will then be used to supply data to all fields which specify the same database.

For a paragraph field, a database MEMO field can be used on the label by supplying the name of the MEMO field at the 'Data Field Name' prompt.

When the format is printed the operator will be prompted for the value of the search field to be found. The software will search the database until a matching record is found. The matching record will be used to supply data to all fields that specify the same database.

There is a method by which you can print out all of the records within a given database. Refer to the $ALL Function and Tutorial in Appendix C for further information.

Database System	Database File	Connection String	Table Name
Search Fields	Search Field Name	Operator Prompt Line	Data Field Name
Trim Trailing Blanks	Maximum Field Length	Typical Field Length	Prompt Number
	Design/Test Value	Variable Table	Variable Table Prompt

Database System
Enter the name of the Database System to use for accessing a database file. You can choose 'the software's (non-SQL) database' to connect to an internal dBase database or choose 'Other Database System' to retrieve data from other types of database files.

Database File
If the field is defined as being from 'the software's (non-SQL) database', then the name of that database must be entered. A list of the currently available databases will be displayed in the dialog box. If you have previously entered a database name, you can use the same name by pressing TAB.

Connection String
To connect to other types of database files, enter the appropriate connection string to the data source here or you can click the 'Prompt' button to be prompted to create the connection string. This string is created by first choosing a Database provider and then creating or choosing a connection to the database. How this is done will depend on your Database Provider.

Variable Table
With this option enable you will be able to choose which language table will provide the data to populate the field.
Only enable this option if you wish to print multi-lingual text from a database and you already setup the appropriate cross reference string.

Table Name
Enter the name of the TABLE containing the data to be printed. This item allows you to select the appropriate database file table.

Search Fields
The number of fields used to search for a specific record.

Search Field Name
The name of the database field that will be used in searching the database. When the operator enters a search value, the database will be searched to find the given value in the Search Field. The corresponding record will then be used to supply data.
This item must be entered once and may be entered as many as 3 times for each database used. If you have previously specified a field using the same database, this item will not appear unless the number of search fields you have specified was more than 1. The choices of field names appear in the dialog box.

Operator Prompt Line
Define the prompt you wish to appear at the time of printing. The prompt will be displayed above the data entry area for the field.

Variable Table Prompt
Define the variable table prompt you wish to appear at the print time. The prompt will be displayed above the data entry area for the field.

Data Field Name

The name of the database field from which this format field will be filled. When the database record to be used is found, data for this format field will be extracted from the field matching the Data Field Name. The field name choices are displayed in the dialog box.

Trim Trailing Blanks
Select Yes to suppress trailing blanks in an extracted database field. Select NO to use the field as it appears.

Maximum Field Length
Enter the maximum number of characters to extract from a database field. A value of 0 indicates that all characters should be used.

Typical Field Length
Enter the typical field length of a database field. This will allow fields to be displayed during label creation using this length. Note that if more characters exist than that specified for the typical length, all characters up to the maximum amount specified will be used. A value of 0 indicates that there is no typical field length.

Prompt Number
If the field's Source of Data is 'When Printed' or 'Database', the software provides the user with control over the order of data input prompts by allowing the user to specify/edit the order in which prompts will appear on the screen. This feature will allow flexibility in designing user input screens

Design/Test Value
Leave this entry BLANK to use the default screen and field width representation, or enter a string of characters which more closely represents typical printed data to help with label design.

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Copied

The data is copied from another field called the copy field. The data in this field will be the same as the data in the copy field.

Name of Copy Field
If the field is defined as 'Copied', you must select the name of the copy field which will supply the data for this field. To copy a bar code check digit, choose the bar code field name with the '@' symbol before it. Available field names are listed in the dialog box.

@TRUECOUNT
@TRUECOUNT allows you to print the number of batches printed of a label on that label.. To use @TRUECOUNT, create a Linked or Copied field and select

@TRUECOUNT. The value of @TRUECOUNT is taken from the number of batches entered by the user on the print request screen.

NOTE: If you later lengthen the copy field, the copied field's length will also change. If you later erase the copy field, the copied field's data will be changed to a single 0 bar code.

Link

What is a Linked Field?
Link data from 2-12 fields. This function will allow you to tie together data from different fields on a format to be printed together in one large field.

Example: You wish to tie together a part number and a serial number into one field called 'IDENTNO'. To accomplish this you would use Link.

Number of Link Fields
The number of fields that will be combined to form this field. You can choose a number between 2 and 12.

Link Field n
The source of the data for each linked field you have defined. Choices of existing fields or special identifiers appear in the dialog box. You may also enter a value enclosed in double quotes. To link a bar code Function 1, Function 2, Function 3, or Function 4 character, select the appropriate function character from the list.

NOTE: If the field is a 'When Printed', 'Link' or 'Database' field, the bar code's interpretation will be displayed as a string of zeroes on the format display.

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Serialized

The data is read from a Serial File. If the data is changed by incrementing or decrementing the field, then the next available serial number will be rewritten to the Serial File.

Serial File Name
The path/name of the Serial File that contains the serial number.

Print Date

The current system date is used to fill the field. Unless a special format is selected, the date will be printed in the Windows default format. For example, if Windows default is English date format, the date Jan 01 2003 will print in the form mm-dd-yy: 01-01-03. To print the date in the European format of dd-mm-yy,

select Special Formatting option 'K' The same can also be achieved by changing the Windows default date format to be European.

Date Offset

The following three date offsets can be used regardless if the printer has an internal clock or not. If the printer has a clock and supports date offsets then the commands are sent to use the printer clock. If date offsets are not supported by the printer or the printer does not have a clock then the field will be sent as fixed data.

Year Offset

Enter the offset for the year. If this is set to something other than 0, that value is added to the current year. To print the current year, leave this value set to 0.

Month Offset

Enter the offset for the month. If this is set to something other than 0, that value is added to the current month. To print the current month, leave this value set to 0.

Day Offset

Enter the offset for the day. If this is set to something other than 0, that value is added to the current day. To print the current day, leave this value set to 0.

Time

The current system time is used to fill the field. The time field will be filled in when formats are selected for printing.

Time Format

These options appear if a Time Stamp is selected. Enter a custom format string using any of the following characters to represent the time:

HH - is to designate the hours

MM - is to designate the minutes

SS - is to designate the seconds

AA - is to designate AM or PM

To suppress a leading zero for the Hour, enter one H.

For example, if you do not want to print the leading zero where the hour is a single digit such as 8 o'clock, enter H:MM:SS to print the time as 8:00:00

Time Offset

The following three time offsets can be used regardless if the printer has an internal clock or not. If the printer has a clock and supports time offsets then the commands are sent to use the printer clock. If time offsets are not supported by the printer or the printer does not have a clock then the field will be sent as fixed data.

Hour Offset

Enter the offset for the hour. If this is set to something other than 0, that value is added to the current hour. To print the current hour, leave this value set to 0.

Minute Offset

Enter the offset for the minute. If this is set to something other than 0, that value is added to the current minute. To print the current minute, leave this value set to 0.

Second Offset

Enter the offset for the second. If this is set to something other than 0, that value is added to the current second. To print the current second, leave this value set to 0.

Arithmetic

Calculate a value based on expression. You may Add, Subtract, Multiply or Divide and specify up to 9 decimal places.

Calculation

This option appears if an Arithmetic field is chosen. Enter an arithmetic expression using the currently defined field names, numeric constants, or a combination of the two with a mathematic operator. You may also use the reserved word 'DATE' to perform calculations that require the use of the current system date. Valid mathematic operators are:

+(addition)

-(subtraction)

*(multiplication)

/(division)

For example, to calculate a 'Sell By' date for a product, you can add a numeric constant to the system date. Type:

DATE + 90

Decimal Places

Number of decimal places may be defined as 0 to 9 in Arithmetic fields.

NOTE: If the field's Source of Data is 'When Printed' or 'Database', the user has control over the order of data input prompts. This feature will allow flexibility in designing user input screen layout.

If the field is a 'When Printed', 'Linked' or 'Database' field, it will be displayed as a string of question marks or ?????'s on the format display.

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External File

The data is contained in a separate text file. You will be prompted to specify the name of the file that contains the text data.

If a '@' symbol is placed as the first character of the external file, the paragraph will appear exactly as it was typed. Without the '@' symbol, the paragraph lines will be based on the number of 'Maximum Lines' and 'Positions Per Line'.

Name When Printed

The name of the paragraph text file. When you print the format, you will be prompted to enter the name of the text file, including the extension.

Database Indirect

The text file name.txt is read in from a database record. You must specify the database name and the name of the database field containing the text file to be used. If this is the first time that this database is being used, the name of the search field and an operator prompt will be required.

To Print out the entire database, refer to the $ALL function for further information.

Tools

Print Format Definition

Print Format Definitions	Destination	Output to File	Font Setup
Printer Setup	Top Margin	Left Margin	

This report, produced in hard copy form, is a listing of the format specifications, as well as specification data for each field defined on the format.

Print Format Definitions
Open the format that you want to print definitions for and choose **Tools | Print Format Definition** from the menu bar.

Next, you are presented with the printing options for printing format definitions.

Each of the Format Definition Print option items are described in the following section:

Destination
Please select the destination for the report. The selections are:

- Printer to send report to the printer
- Printer Data File create a file which includes printer control characters
- Text File to create a fixed-space ASCII text file.

Output to File
Define the Name/Path of the file to be created when Printer Data File or Text File is selected under Destination.

Font Setup
Select No to use the default printer font. Select Yes for the option to use a different font for this report.

Printer Setup
Select No to use the current default printer options. Select Yes to bring up the "Windows Print Setup" box. This allows the user to select and configure which printer to send the format definition to.

Top Margin
Enter the distance from the top of the paper to the beginning print position in inches or millimeters.

Left Margin
Enter the HORIZONTAL OFFSET of the print image area from the left edge of the paper in inches or millimeters.

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Cross Hairs

Using the Extended Cross Hairs can make field placement much easier. A thin line is displayed vertically and horizontally on the format showing exactly where the pointer is at all times. This allows easier use of the rulers to precisely place your field.

Align

Align Left

To Left Align multiple fields on a format, select the relevant fields, and chose the Align Left function.

Center Horizontally

Used to precisely align the Horizontal Center Line of two or more fields on a format. Choose the relevant fields and select the Center Horizontally function. This will align the Horizontal Center Lines of the selected objects.

Align Right

To Right Align multiple fields on a format, select the relevant fields, and chose the Align Right function.

Space Horizontally

To precisely space multiple fields horizontally on a format choose the relevant fields and select the Space Horizontally function.

Align Up

Select align up to position fields to be parallel with the lowest field on the format.

Center Vertically

Used to precisely align the Vertical Center Line of two or more fields on a format. Choose the relevant fields and select the Center Vertically function. This will align the Vertical Center Lines of the selected objects.

Align Down

Select align down to position fields to be parallel with the lowest field on the format.

Space Vertically

To precisely space multiple fields vertically on a format choose the relevant fields and select the Space Vertically function.

Avery Dennison

Avery Dennison Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Use Hardware Handshake	Baud Rate	Port
Concurrent Access	Cutter	Calendar Option	Set Printer Darkness

Printer Name
The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description
The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer
Select the Manufacturer of the printer from the list provided.

Printer Model
Select the printer model to be used.

Type of Port
Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Use Hardware Handshake
Select 'Yes' to use a hardware handshake. Select 'No' to use an XON/XOFF handshake.

Baud Rate
Indicate the baud rate used. Baud rates may vary on different printers.

Port
Select the port to which the printer is attached.

Concurrent Access
Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

Cutter
Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Calendar Option
Select 'Yes' if your printer has the calendar option (clock chip) installed. This will allow formats that contain date/time fields to be handled internally in the printer and be updated to reflect the current date/time when the label is printed. Select 'No' to download the date/time from the program.

Set Printer Darkness
Select 'Yes' to allow software to set printer darkness. This will override any darkness setting defined in the printer. Select 'No' to use printers darkness setting.

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Avery Dennison Cables

9 Pin Cable Configuration 25 Pin Cable Configuration

9 Pin Cable Configuration

25 Pin Cable Configuration

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cab

A Series

A Series, M Series and Mach Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model	Type of Port
Port	Concurrent Access	RS485	Printer Address	Baud Rate
Cutter	Set Printer Clock	Direct Print	Darkness Adjustment	Offset Adjustment
Pause Before Printing	Standard Code Size	Download Graphics Format	Size of Gap	Print Mode

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

RS485

Select 'Yes' if using an RS 485 protocol, otherwise select 'No'.

Printer Address

Used when the RS485 option is set to 'Yes'. Enter the sequential number or network ID of the printer (from 1 to 26) within the list of printers on this port.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

NOTE: Always make sure the Baud Rate is the same as your printer setup.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Set Printer Clock

Select 'Yes' to set the printer clock to match the computer clock. Select 'No' to NOT set the printer clock to match the computer clock.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Darkness Adjustment

Enter a number from -4 to +4 to adjust the base level of print darkness. Negative numbers make the print lighter.

Offset Adjustment

Adjust the form edge offset. Offset adjustment is the number from -99 to +999 needed to change the formats starting print position. Negative numbers will move the starting position down from the top of the format. Positive numbers will move the starting position up towards the top of the format.

Pause Before Printing

Select 'Yes' to pause the printer before printing each job. Pausing the printer is a safety precaution that protects the operator when an applicator is being used. Select 'No' to print each job without pausing the printer.

Standard Code Sizes

Select Standard Code Sizes to use standard (SCx) symbol sizes for UPC/EAN bar codes, otherwise leave blank. Deselect Standard Code Sizes to print UPC and EAN symbologies with user-defined values. Selecting Standard Code Sizes allow you to print UPC and EAN symbologies using the European standard code sizes. You are also given the option of choosing from a list of available sizes on the bar code specification screen.

Download Graphics Format

Use IMG for traditional imaging, PCX for higher quality imaging. IMG processing is faster, whereas PCX processing produces a higher quality image. This option only applies when Enhanced Image Processing is selected in the Program Options.

Print Mode

The Print Mode option appears on the Format Specification screen and allows the user to select the desired mode of printing: Batch, Peel-Off, or Tear-Off.

Size of Gap

Entering the size of the gap between the labels allows for more accurate forms control.

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9 - Pin Cable Configuration

A Series, M Series and Mach Notes

RS - 232 Communications	Using the Cutter	Maxicode	Flash Memory Card Downloads
Cut Offset	Using an Optional Keyboard	Disable Reprint	

RS - 232 Communications

For RS-232 Serial Communications:

Data Bits: 8

Stop Bits: 1

Parity: None

Handshake: RTS/CTS (on Printer)

Character Set: Windows 1252 (on Printer)

Using the Cutter

On the format specification screen, you have the ability to cut after each format, cut after each batch or cut after each job if the printer has a cutter installed.

When selecting to cut after each format, an additional screen item 'Cut Offset' allows you to specify where the label should be cut.

Maxicode

When using Maxicode with Apollo printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

data... = Alphanumeric Data (maximum length: 84 characters)

Example:

123999#442120798#This is an example.

Flash Memory Card Downloads

Select Memory Card Download to mark this format to be intended for download to the memory card.

Note that some software features will not be accessible during label creation due to printer and memory card limitations.

Cut Offset

Enter the distance from the point at which the label stops printing and the point at which the label is to be cut in hundredths of inches.

This value should be approximately .60". To make TWO cuts per label, enter two offsets separated by a comma. For example, to cut a reflective marking out of a label, the first offset should be approximately .60" and the second offset should the amount of space between the end of the first label and the start of the second label.

Using an Optional Keyboard

An optional keyboard can be attached to the printer. This allows faster input for variable data entry for formats stored on the memory card that require operator input. Please see the printer Operators Manual for additional information.

Disable Reprint

Select Disable Reprint to prevent the printer from reprinting the last label format that was printed.

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Apollo

Apollo Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model	Type of Port
Port	Concurrent Access	RS 485	Printer Address	Baud Rate
Direct Print	Cutter	Set Printer Clock	Darkness Adjustment	Offset Adjustment
Pause Before Printing	Standard Code Size	Download Graphics Format	Print Mode	Size of Gap

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

RS 485

Select RS 485 if using an RS 485 protocol, otherwise leave blank. The optional RS-232 to RS-485 adapter allows for up to 26 Apollo printers to be connected to the port. Accessing individual printers is accomplished by assigning each connected printer its own network address from the printer's front panel. Each printer is then configured to match this address. At print time, simply choose which printer in the print screen to send the job to.

Printer Address

Used when the RS485 option is set to 'Yes'. Enter the sequential number or network ID of the printer (from 1 to 26) within the list of printers on this port.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

NOTE: Always make sure the Baud Rate is the same as your printer setup.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Set Printer Clock

Select 'Yes' to set the printer clock to match the computer clock. Select 'No' to NOT set the printer clock to match the computer clock.

Darkness Adjustment

Enter a number from -3 to +3 to adjust the base level of print darkness. Negative numbers make the print lighter.

Offset Adjustment

Adjust the form edge offset. Offset adjustment is the number from -99 to +999 needed to change the formats starting print position. Negative numbers will move the starting position down from the top of the format. Positive numbers will move the starting position up towards the top of the format.

Pause Before Printing

Select 'Yes' to pause the printer before printing each job. Pausing the printer is a safety precaution that protects the operator when an applicator is being used. Select 'No' to print each job without pausing the printer.

Standard Code Sizes

Select Standard Code Sizes to use standard (SCx) symbol sizes for UPC/EAN bar codes, otherwise leave blank. Deselect Standard Code Sizes to print UPC and EAN symbologies with user-defined values. Selecting Standard Code Sizes allow you to print UPC and EAN symbologies using the European standard code sizes. You are also given the option of choosing from a list of available sizes on the bar code specification screen.

Download Graphics Format

Use IMG for traditional imaging, PCX for higher quality imaging. IMG processing is faster, whereas PCX processing produces a higher quality image. This option only applies when Enhanced Image Processing is selected in the Program Options.

Print Mode

The Print Mode option appears on the Format Specification screen and allows the user to select the desired mode of printing: Batch, Peel-Off, or Tear-Off.

Size of Gap

Entering the size of the gap between the labels allows for more accurate forms control.

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Apollo Cables

9 - Pin Cable Configuration | 25 - Pin Cable Configuration | RS - 485 Cable Configuration

9 - Pin Cable Configuration

25 - Pin Cable Configuration

RS - 485 Cable Configuration

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Apollo Notes

RS - 232 Communications	RS - 485 Communications	Using the Cutter	Maxicode
Memory Card Downloads	Cut Offset	Using an Optional Keyboard	Disable Reprint

RS - 232 Communications

For RS-232 Serial Communications:

Data Bits: 8

Stop Bits: 1

Parity: None

Handshake: RTS/CTS (on Printer)

Character Set: Windows 1252 (on Printer)

RS - 485 Communications

For RS-485 Serial Communications:

Data Bits: 8

Stop Bits: 1

Parity: None

Character Set: Windows 1252 (on Printer)

Network Address: Printer and Software MUST match

In order to daisy-chain Apollo printers, the PC must have an RS-485 converter, as supplied by your reseller.

The Apollo printer network can support up to 26 printers.

Using the Cutter

On the format specification screen, you have the ability to cut after each format, cut after each batch or cut after each job if the printer has a cutter installed.

When selecting to cut after each format, an additional screen item 'Cut Offset' allows you to specify where the label should be cut.

Maxicode

When using Maxicode with Apollo printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

data... = Alphanumeric Data (maximum length: 84 characters)

Example:

123999#442120798#This is an example.

Memory Card Downloads

Select Memory Card Download to mark this format to be intended for download to the memory card.

Note that some software features will not be accessible during label creation due to printer and memory card limitations.

Cut Offset

Enter the distance from the point at which the label stops printing and the point at which the label is to be cut in hundredths of inches.

This value should be approximately .60". To make TWO cuts per label, enter two offsets separated by a comma. For example, to cut a reflective marking out of a label, the first offset should be approximately .60" and the second offset should the amount of space between the end of the first label and the start of the second label.

Using an Optional Keyboard

An optional keyboard can be attached to the printer using a special keyboard adaptor. This allows faster input for variable data entry for formats stored on the memory card that require operator input. Please see the printer Operators Manual for additional information.

Disable Reprint

Select Disable Reprint to prevent the printer from reprinting the last label format that was printed.

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Memory Card Functions

Using a Memory Card	Store As	Quantity	Batch Size
Number of Formats	Printer Number	Output File	Downloading to a PCMCIA Drive
Format			

Using a Memory Card

When a memory card is inserted in the printer, it is automatically detected by the printer. Refer to your printer manual for information on properly installing a memory card.

From the Print screen, you can choose to have formats sent directly to the printer or downloaded to the memory card for later use. A format can also be printed to a file for programming purposes. Within the Print Queue, formats can be erased from the printer's memory card, a directory of formats on the card can be viewed or the memory card can be formatted.

To download to the memory card, select Tools | Download Format to Memory Card from the Print screen.

Store As

Enter the name under which the format will be stored on the memory card. To have this format selected automatically whenever the printer is powered on, use the name 'Default'.

If the format is called 'Default', then this label will be printed automatically each time the printer is turned on.

Quantity

Specify how the number of labels to be printed is set.

- Indefinite - Printer prints indefinitely
- Printer Prompts - Printer prompts for quantity to be printed.
- Fixed - Printer prints a previously specified quantity.

Batch Size

Enter the number of identical copies of each format you want printed. When this format is stored on the memory card, then selected for printing, the same number of identical labels will print each time.

This screen item will only appear if there is an incrementing field on the label.

Number of Formats

Enter the number of formats you want printed. When this format is stored on the memory card, then selected for printing, the same number of labels will print each time.

This screen item will only appear if a Fixed quantity was chosen.

Printer Number

Select the number of the printer to use in order to print the format. You can also choose to print your format to a file.

Output File

Enter the name of the name of an output file for the format. Entering the name of an existing file will append new information to previous information. Entering a new filename will create a new file.

Downloading to a PCMCIA Drive

This option is found at the print screen under the "Tools" menu. This allows you to send a format to a memory card in a PCMCIA drive instead of an Apollo printer.

Formats can also be written directly to a PCMCIA drive attached to your computer. The PCMCIA card, with the stored formats, can then be used in the Apollo printer for future off line printing. If you have a PCMCIA slot that acts like a drive, you can choose to send the format to the PCMCIA drive by simply designating the drive letter of the PCMCIA card. This allows formats to be sent to PC cards without having a printer directly attached to your PC. However, for formats that use TrueType fonts, graphics, database files or any external file, you must have a printer attached directly to your PC and download the format to the memory card in the printer.

Format Card

The format card option allows you to format a memory card. Any formats that are already stored on the card will be erased. When formatting a card, the name 'Apollo' is automatically assigned to the card. You may specify a different name for the card by typing a new name in 'Name' dialog box.

Delete File

The delete file option allows you to delete a file (such as a graphic, a database or a format) from the card. Choose a format name from the available list of stored formats, then click on the Delete File button.

A dialog box appears asking you to confirm the file for deletion. Choose OK to delete the file from the memory card or choose Cancel if you do not want to delete the file.

Details

You can locate the Details button by entering the Print Queue, highlighting an Apollo printer from the list, clicking Memory Card and then Details. You will receive the message "Accessing Memory Card. Please wait..." The software will read the contents of the card and present the user with details on the files stored there including the name, date, available memory and so on.

Memory Card Limitations

Long filenames for database and serial files are not supported when using the Apollo printer and downloading them to the PCMCIA memory cards.

The table below displays the features that are available when using the Apollo memory card:

Field Type	Source of Data	Options
Bar Codes	Fixed	Incrementation/Decrementation
	Database	Character Field Types ONLY
	Copied	Incrementation/Decrementation
	Link	Incrementation/Decrementation
	When Printed	Data Type Validation: numeric, alpha, alphanumeric, date, upper case characters, upper case alphabetic, upper case alphanumeric Incrementation/Decrementation
Text	Fixed	Incrementation/Decrementation
	When Printed	Incrementation/Decrementation
	Database	Character Field Types ONLY
	Copied	Incrementation/Decrementation
	Link	Incrementation/Decrementation
	Serialized	Numeric Incrementation/Decrementation ONLY
	Date	Printer's Internal Calendar is used.
	Time	Printer's Internal Clock is used.
	Arithmetic	
Graphics	Fixed	
Lines		
Rectangle		
Ovals		
Polygons		

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C.Itoh

C.Itoh Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Port	Baud Rate	Concurrent Access
Use Hardware Handshake	Direct Print	Device Attached	Printer Address
Printer Memory	Cutter	Set Printer Clock	Darkness Adjustment
Offset Adjustment	Initial Label Feed		

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the model of printer to be used

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

Use Hardware Handshake

Select 'Yes' to use a hardware handshake. Select 'No' to use an XON/XOFF handshake.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Device Attached

Enter the type of device that is attached to the port. The choices are Printer, Western Telematic 4-way Switch, 8-way Switch, or 16-way Switch.

Printer Address

When configuring a printer that is attached to a Western Telematic Switch Box, enter the number on the switch box that the printer is connected to.

Printer Memory

Select the corresponding memory option if a memory card or cartridge has been installed in the printer.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Set Printer Clock

Select 'Yes' to set the printer clock to match the computer clock. Select 'No' to NOT set the printer clock to match the computer clock.

Darkness Adjustment

Enter a number from -3 to +3 to adjust the base level of print darkness. Negative numbers make the print lighter.

Offset Adjustment

Enter a number from -99 to 999 to adjust the form edge offset. This allows you to compensate for slight mechanical differences between printers. This may also be accomplished with settings on the printer's front panel.

Initial Label Feed

Allow blank label feed before printing first job or suppress label feed. Allowing an initial label feed will align the print head to the leading edge of die-cut label stock

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C.Itoh Cables

9 Pin Cable Configuration	25 Pin Cable Configuration	Western Telematic Switchbox - 41 - Dip Switches
Western Telematic Switchbox - 41a - Dip Switches	Western Telematic Switchbox - 81c - Dip Switches	Western Telematic Switchbox - 161a - Dip Switches
Western Telematic Switch Box Printer Assignments	Western Telematic Switchbox - 41, 41a, 161a Cable Configuration	Western Telematic Switchbox - 81c Cable Configuration

9 Pin Cable Configuration

25 Pin Cable Configuration

Western Telematic Switch Boxes

You have the ability to increase the number of printers you can drive with your PC by using a Western Telematic CAS-41 4-way switch box, a Western Telematic CAS-81 8-way switch box or a Western Telematic CAS-161A 16-way switch box. These switching devices may be obtained from:

WESTERN TELEMATIC, INC.
5 Sterling
Irvine, CA 92718 USA
714.586.9950 • 800.854.7226
Fax: 714.583.9514
www.wti.com

If you are using a Western Telematic Switch, formats that contain TrueType font text fields cannot be downloaded as a font to the printer through the Western Telematic Switch Box. The Western Telematic does not allow TrueType fonts to be downloaded. When using TrueType font text fields on a format and a Western Telematic Switch, you must download the font as a graphic.

Western Telematic Switchbox - 41 - Dip Switches

Western Telematic Switchbox - 41a - Dip Switches

Western Telematic Switchbox - 81c - Dip Switches

The CAS - 81C 8-way Switch Box is equipped with a set of 8 position or 10 position Dip Switches as follows:

NOTE: When purchasing the CAS-81c 8-way switchbox, it must be equipped with firmware version 1.0a.

Western Telematic Switchbox - 161a - Dip Switches

Western Telematic Switch Box Printer Assignments

If a third CAS-41 Code Activated Switch is connected to the PC above, printer assignments would be 9 through 12. The same would be true for the CAS-161A, where the first switch box would go to Printers 1 through 16, the second switch box would go to Printers 17 through 32 and if a third switch box is connected, it would go to Printers 33 through 48.

Western Telematic Switchbox - 41, 41a, 161a Cable Configuration

Western Telematic Switchbox - 81c Cable Configuration

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C.Itoh Notes

MaxiCode RS - 232 Communications

MaxiCode

When using MaxiCode with C.Itoh printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

data... = Alphanumeric Data (maximum length: 84 characters)

Example:

123999#442120798#This is an example.

RS-232 Communications

- Data Bits: 8
- Stop Bits: 1
- Parity: None
- Handshake: RTS/CTS (on Printer)

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Citizen

Citizen Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Port	Concurrent Access	Use Hardware Handshake
Baud Rate	Cutter	Printer Memory	Direct Print
Set Printer Clock	Darkness Adjustment	Offset Adjustment	Initial Label Feed

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the model of printer to be used

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

Use Hardware Handshake

Select 'Yes' to use a hardware handshake. Select 'No' to use an XON/XOFF handshake.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

Device Attached

Enter the type of device that is attached to the port. The choices are Printer, Western Telematic 4-way Switch, 8-way Switch, or 16-way Switch.

Printer Address

When configuring a printer that is attached to a Western Telematic Switch Box, enter the number on the switch box that the printer is connected to.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Printer Memory

If a memory cartridge is installed, select the option corresponding to the memory module that is inserted into the top cartridge slot. A memory module is required in the Prodigy and Prodigy Plus printers to store picture information and TrueType fonts. If the memory module is not present, the printer will still work, but any graphic that is downloaded, will not be printed.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Set Printer Clock

Select 'Yes' to set the printer clock to match the computer clock. Select 'No' to NOT set the printer clock to match the computer clock.

Darkness Adjustment

Enter a number from -3 to +3 to adjust the base level of print darkness. Negative numbers make the print lighter.

Offset Adjustment

Enter a number from -99 to 999 to adjust the form edge offset. This allows you to compensate for slight mechanical differences between printers. This may also be accomplished with settings on the printer's front panel.

Initial Label Feed

Allow blank label feed before printing first job or suppress label feed. Allowing an initial label feed will align the print head to the leading edge of die-cut label stock

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Citizen Cables

9 Pin Cable	25 Pin Cable	Western Telematic

Configuration	Configuration	Switchbox - 41 - Dip Switches
Western Telematic Switchbox - 41a - Dip Switches	Western Telematic Switchbox - 81c - Dip Switches	Western Telematic Switchbox - 161a - Dip Switches
Western Telematic Switch Box Printer Assignments	Western Telematic Switchbox - 41, 41a, 161a Cable Configuration	Western Telematic Switchbox - 81c Cable Configuration

9 Pin Cable Configuration

25 Pin Cable Configuration

Western Telematic Switch Boxes

You have the ability to increase the number of printers you can drive with your PC by using a Western Telematic CAS-41 4-way switch box, a Western Telematic CAS-81 8-way switch box or a Western Telematic CAS-161A 16-way switch box. These switching devices may be obtained from:

WESTERN TELEMATIC, INC.
5 Sterling
Irvine, CA 92718 USA
714.586.9950 • 800.854.7226
Fax: 714.583.9514
www.wti.com

If you are using a Western Telematic Switch, formats that contain TrueType font text fields cannot be downloaded as a font to the printer through the Western Telematic Switch Box. The Western Telematic does not allow TrueType fonts to be downloaded. When using TrueType font text fields on a format and a Western Telematic Switch, you must download the font as a graphic.

Western Telematic Switchbox - 41 - Dip Switches

Western Telematic Switchbox - 41a - Dip Switches

Western Telematic Switchbox - 81c - Dip Switches

The CAS - 81C 8-way Switch Box is equipped with a set of 8 position or 10 position Dip Switches as follows:

NOTE: When purchasing the CAS-81c 8-way switchbox, it must be equipped with firmware version 1.0a.

Western Telematic Switchbox - 161a - Dip Switches

Western Telematic Switch Box Printer Assignments

If a third CAS-41 Code Activated Switch is connected to the PC above, printer assignments would be 9 through 12. The same would be true for the CAS-161A, where the first switch box would go to Printers 1 through 16, the second switch box would go to Printers 17 through 32 and if a third switch box is connected, it would go to Printers 33 through 48.

Western Telematic Switchbox - 41, 41a, 161a Cable Configuration

Western Telematic Switchbox - 81c Cable Configuration

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Citizen Notes

RS - 232 Communications MaxiCode

RS-232 Communications

- Data Bits: 8
- Stop Bits: 1
- Parity: None
- Handshake: RTS/CTS (on Printer)

MaxiCode

When using MaxiCode with Citizen printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

data... = Alphanumeric Data (maximum length: 84 characters)

Example:

123999#442120798#This is an example.

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Datamax

Datamax Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Port	Concurrent Access	Baud Rate
Device Attached	Printer Address	Direct Print	Printer Memory
Cutter	Set Printer Clock	Darkness Adjustment	Offset Adjustment
Initial Label Feed	Optimize DataMatrix	Optimize QR Code	RFID Enabled

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the model of printer to be used

Type of Port

Select the type of port the device is attached to. The choices are Serial, Parallel, Network, IP or USB. Depending on the printer selected, the USB option may not be available since not all printers support the USB interface.

Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

Use Hardware Handshake

Select 'Yes' to use a hardware handshake. Select 'No' to use an XON/XOFF handshake.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

Device Attached

Enter the type of device that is attached to the port. The choices are Printer, Western Telematic 4-way Switch, 8-way Switch, or 16-way Switch.

Printer Address

When configuring a printer that is attached to a Western Telematic Switch Box, enter the number on the switch box that the printer is connected to.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Printer Memory

If a memory cartridge is installed, select the option corresponding to the memory module that is inserted into the top cartridge slot. A memory module is required in the Prodigy and Prodigy Plus printers to store picture information and TrueType fonts. If the memory module is not present, the printer will still work, but any graphic that is downloaded, will not be printed.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Set Printer Clock

Select 'Yes' to set the printer clock to match the computer clock. Select 'No' to NOT set the printer clock to match the computer clock.

Darkness Adjustment

Enter a number from -3 to +3 to adjust the base level of print darkness. Negative numbers make the print lighter.

Offset Adjustment

Enter a number from -99 to 999 to adjust the form edge offset. This allows you to compensate for slight mechanical differences between printers. This may also be accomplished with settings on the printer's front panel.

Initial Label Feed

Allow blank label feed before printing first job or suppress label feed. Allowing an initial label feed will align the print head to the leading edge of die-cut label stock.

Optimize DataMatrix

Select 'Yes' to optimize the DataMatrix 2D symbology. If the printer supports this symbology internally (has correct firmware version), it will print much quicker. Select 'No' to produce DataMatrix as a graphic. This is supported for all printers but prints slower.

Optimize QR Code

Select 'Yes' to optimize the QR-Code 2D symbology. If the printer supports this symbology internally (has correct firmware version), it will print much quicker. Select 'No' to produce QR-Code as a graphic. This is supported for all printers but prints slower.

RFID Enabled

Select 'Yes' if the printer has RFID capability.

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Datamax Cables

9 Pin Cable Configuration	25 Pin Cable Configuration	Ovation! and Ovation! 2 - 9 Pin Cable Configuration
Ovation! and Ovation! 2 - 25 Pin Cable Configuration	Western Telematic Switchbox - 41 - Dip Switches	Western Telematic Switchbox - 41a - Dip Switches
Western Telematic	Western Telematic	Western Telematic

Switchbox - 41a - Changing Monitor Pins	Switchbox - 81c - Dip Switches	Switchbox - 161a - Dip Switches
Western Telematic Switch Box Printer Assignments	Western Telematic Switchbox - 41, 41a, 161a Cable Configuration	Western Telematic Switchbox - 81c Cable Configuration

9 Pin Cable Configuration

25 Pin Cable Configuration

Ovation! and Ovation! 2 - 9 Pin Cable Configuration

NOTE: Communications for the Datamax Ovation! and Ovation! 2 must be set by a printer software command. Please refer to the printer's user manual for more information.

Ovation! and Ovation! 2 - 25 Pin Cable Configuration

NOTE: Communications for the Datamax Ovation! and Ovation! 2 must be set by a printer software command. Please refer to the printer's user manual for more information.

Western Telematic Switch Boxes

You have the ability to increase the number of printers you can drive with your PC by using a Western Telematic CAS-41 4-way switch box, a Western Telematic CAS-81 8-way switch box or a Western Telematic CAS-161A 16-way switch box. These switching devices may be obtained from:

WESTERN TELEMATIC, INC.
5 Sterling
Irvine, CA 92718 USA
714.586.9950 • 800.854.7226
Fax: 714.583.9514
www.wti.com

If you are using a Western Telematic Switch, formats that contain TrueType font text fields cannot be downloaded as a font to the printer through the Western Telematic Switch Box. The Western Telematic does not allow TrueType fonts to be downloaded. When using TrueType font text fields on a format and a Western Telematic Switch, you must download the font as a graphic.

Western Telematic Switchbox - 41 - Dip Switches

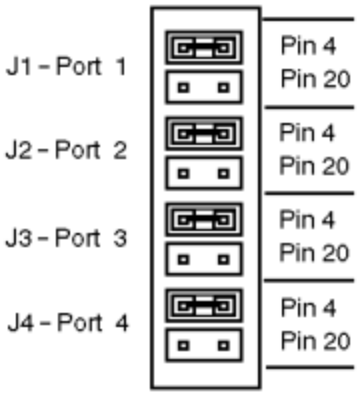
Western Telematic Switchbox - 41a - Dip Switches

Western Telematic Switchbox - 41a - Changing Monitor Pins

The four internal jumpers located on the CAS-41A circuit board are used to switch the CAS-41A to monitor pin 4 (Request to Send) instead of pin 20 (factory setting). To switch monitor pins, proceed as follows:

CAUTION: Make certain to power off the CAS-41A and disconnect the power cable before attempting to remove the instrument cover.

1. Remove the four screws that secure the CAS-41A's plastic cover to the chassis. Remove the cover from the chassis.
2. Locate the jumpers on the CAS-41A circuit board. As you face the instrument back panel, the jumpers are located in the lower left hand corner of the circuit board. Move the jumpers as shown to monitor pin4.
3. Replace the plastic cover on the CAS-41A chassis. Reinstall the four screws that secure the cover to the chassis. Reconnect the power cable and switch the power on.



Western Telematic Switchbox - 81c - Dip Switches

The CAS - 81C 8-way Switch Box is equipped with a set of 8 position or 10 position Dip Switches as follows:

NOTE: When purchasing the CAS-81c 8-way switchbox, it must be equipped with firmware version 1.0a.

Western Telematic Switchbox - 161a - Dip Switches

Western Telematic Switch Box Printer Assignments

If a third CAS-41 Code Activated Switch is connected to the PC above, printer assignments would be 9 through 12. The same would be true for the CAS-161A, where the first switch box would go to Printers 1 through 16, the second switch box would go to Printers 17 through 32 and if a third switch box is connected, it would go to Printers 33 through 48.

Western Telematic Switchbox - 41, 41a, 161a Cable Configuration

Western Telematic Switchbox - 81c Cable Configuration

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Datamax Notes

RS - 232 Communications MaxiCode

When configured for a Datamax printer, you can configure the software to send TrueType fonts as a graphic by not checking the Download Fonts screen item in the Label Setup properties sheet under the Special Options tab.

RS-232 Communications

- Data Bits: 8
- Stop Bits: 1
- Parity: None
- Handshake: RTS/CTS (on Printer)

MaxiCode

When using Maxicode with Datamax printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

data... = Alphanumeric Data (maximum length: 84 characters)

Example:

123999#442120798#This is an example.

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Fargo

Fargo Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Port	Use Hardware Handshake	Concurrent Access
Baud Rate	Direct Print	Device Attached	Printer Memory
Cutter	Darkness Adjustment	Offset Adjustment	Initial Label Feed

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the model of printer to be used

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Use Hardware Handshake

Select 'Yes' to use a hardware handshake. Select 'No' to use an XON/XOFF handshake.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

Device Attached

Enter the type of device that is attached to the port. The choices are Printer, Western Telematic 4-way Switch, 8-way Switch, or 16-way Switch.

Printer Address

When configuring a printer that is attached to a Western Telematic Switch Box, enter the number on the switch box that the printer is connected to.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Printer Memory

If a memory cartridge is installed, select the option corresponding to the memory module that is inserted into the top cartridge slot. A memory module is required in the Prodigy and Prodigy Plus printers to store picture information and TrueType fonts. If the memory module is not present, the printer will still work, but any graphic that is downloaded, will not be printed.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Darkness Adjustment

Enter a number from -3 to +3 to adjust the base level of print darkness. Negative numbers make the print lighter.

Offset Adjustment

Enter a number from -99 to 999 to adjust the form edge offset. This allows you to compensate for slight mechanical differences between printers. This may also be accomplished with settings on the printer's front panel.

Initial Label Feed

Allow blank label feed before printing first job or suppress label feed. Allowing an initial label feed will align the print head to the leading edge of die-cut label stock

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Fargo Cables

9 Pin Cable Configuration	25 Pin Cable Configuration	Western Telematic Switchbox - 41 - Dip Switches
Western Telematic Switchbox - 41a - Dip Switches	Western Telematic Switchbox - 81c - Dip Switches	Western Telematic Switchbox - 161a - Dip Switches
Western Telematic Switch Box Printer Assignments	Ovation! and Ovation! 2 - 9 Pin Cable Configuration	Ovation! and Ovation! 2 - 25 Pin Cable Configuration
Western Telematic Switchbox - 41, 41a, 161a Cable Configuration	Western Telematic Switchbox - 81c Cable Configuration	

9 Pin Cable Configuration

25 Pin Cable Configuration

Western Telematic Switch Boxes

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WESTERN TELEMATIC, INC.
5 Sterling
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www.wti.com

If you are using a Western Telematic Switch, formats that contain TrueType font text fields cannot be downloaded as a font to the printer through the Western Telematic Switch Box. The Western Telematic does not allow TrueType fonts to be downloaded. When using TrueType font text fields on a format and a Western Telematic Switch, you must download the font as a graphic.

Western Telematic Switchbox - 41 - Dip Switches

Western Telematic Switchbox - 41a - Dip Switches

Western Telematic Switchbox - 81c - Dip Switches

The CAS - 81C 8-way Switch Box is equipped with a set of 8 position or 10 position Dip Switches as follows:

NOTE: When purchasing the CAS-81c 8-way switchbox, it must be equipped with firmware version 1.0a.

Western Telematic Switchbox - 161a - Dip Switches

Western Telematic Switch Box Printer Assignments

If a third CAS-41 Code Activated Switch is connected to the PC above, printer assignments would be 9 through 12. The same would be true for the CAS-161A, where the first switch box would go to Printers 1 through 16, the second switch box would go to Printers 17 through 32 and if a third switch box is connected, it would go to Printers 33 through 48.

Ovation! and Ovation! 2 - 9 Pin Cable Configuration

NOTE: Communications for the Datamax Ovation! and Ovation! 2 must be set by a printer software command. Please refer to the printer's user manual for more information.

Ovation! and Ovation! 2 - 25 Pin Cable Configuration

NOTE: Communications for the Datamax Ovation! and Ovation! 2 must be set by a printer software command. Please refer to the printer's user manual for more information.

Western Telematic Switchbox - 41, 41a, 161a Cable Configuration

Western Telematic Switchbox - 81c Cable Configuration

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Fargo Notes

RS - 232 Communications MaxiCode

RS-232 Communications

- Data Bits: 8
- Stop Bits: 1
- Parity: None
- Handshake: RTS/CTS (on Print

MaxiCode

When using MaxiCode with Fargo printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

data... = Alphanumeric Data (maximum length: 84 characters)

Example:

123999#442120798#This is an example.

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HP

HP Setup

Printer Name	Printer Description	Printer Manufacturer
Printer Model	Type of Port	Port
Direct Print	Printer Memory	Upper Case International

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the model of printer to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Printer Memory

Indicate how much memory or whether an additional memory card or cartridge is installed in the printer. Select S to indicate that the printer has STANDARD memory (512K) installed. Select E to indicate that the printer has EXTENDED memory installed (more that 512K).

Upper Case International

Deselect to disable uppercase International Characters. This allows a smaller cell size for each character. Select to enable uppercase International Characters. This will protect International Characters with uppercase ascenders (accent marks, umlauts, etc.) from being omitted when the top of that character is placed along the outside edges of a format. Please be aware that this option will move the field away from the outside edge of the printed label.

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HP Notes

Laser Jet Communications	Bar Code Verification	Downloaded Fonts	Compatible Printer
Printable Area	Printable Characters	Paper Size	Bar Width Multipliers
Field Direction	Printing a Set of Formats	Print Queue	True Type Fonts

Laser Jet Communications

The HP LaserJet Series II, IIP, III, IV, and V should be set to factory defaults. The only exception being Parallel I/O.

Following are the specific settings which were tested:

Auto Continue = Off

Symbol Set = Roman - 8

Copies = 1

Manual Feed = Off

Font Source = I

Font Number = 00

Form = 60 Lines

Parallel I/O

Refer to your HP LaserJet Printer Manual for information on how to configure your printer and how to print a self test.

Bar Code Verification

Bar codes were tested using an original HP cartridge with the printer's darkness control set to a five (5). Refilled cartridges had varying results. All bar codes were verified as being in spec in all resolutions using a Quick-Check IV verifier.

Downloaded Fonts

A record is kept of what fonts have been sent to the printer. If for any reason the printer is turned off during the course of a day's work, you should exit the program and then restart the program by double-clicking on the icon.

Compatible Printer

We have found many "compatible" laser printers to be less than 100% compatible with the LaserJet Series II. It is recommended that you use an HP printer or that you test the printer thoroughly before you make a purchase. LaserJet Plus emulation is not enough. It must be LaserJet Series II compatible or higher.

Printable Area

There is a dead space of unprintable area of approximately ¼" around the perimeter of the page. The margin command starts from this point and not the upper left corner of the paper.

Printable Characters

Overall character height including lower case descenders must be taken into account when deciding what can print on a page. Therefore, the maximum character height that could print on an 11" form with a print area height of 10.59" is 7.99".

Any field that would be off the format due to the lower case characters is automatically moved up even if lower case is not used.

Paper Size

Paper width can be defined to be as large as 19.68". A legal size paper tray is needed to print 8 ½" x 14" formats. The printer must also be set to "Paper=Legal".

Please refer to your HP LaserJet Printer Manual for more information on how to set this option.

Bar Width Multipliers

This function allows you to establish the density of your bar code. Everything revolves around the dot size that the laser printer can print. The printable dot size is 3.3 Mils.

Example: UPC printed in 100% magnification has a 13 Mil narrow bar. To achieve this you would use a multiplier of 4 which would give you approximately 102% magnification.

Field Direction

If you are printing to an HP LaserJet Series II, bar codes can be designed and printed in orientations 1 and 4, however, bar codes in orientation 4 can not print the human readable interpretation.

Printing a Set of Formats

You can use the software in a demand mode when you only need one replacement label at a time. On the Print Request Screen, you can specify the starting print position in which to begin printing formats on your sheet of labels. This will allow you to remove labels one at a time from the sheet and re-feed the sheet many times.

We recommend not printing on the center strip of labels and keeping them in place. This will allow the printer's pick up mechanism to work properly.

Print Queue

If there is a database error when using $ALL, the associated report will have a zero in the number of labels printed.

TrueType Fonts

TrueType fonts on the HP printers are supported on the Text Field definition screen.

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Intermec

Intermec Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Port	Concurrent Access	Baud Rate
Direct Print	Printer Memory	Cutter	Initial Label Feed

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the model of printer to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent

access. This option appears for those printers that can be configured for serial printing.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

Direct Print

Select Direct Print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95,98, or ME.

Printer Memory

If a Memory cartridge is installed, select the option corresponding to the memory module that is inserted into the top cartridge slot.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Initial Label Feed

Allow blank label feed before printing first job or suppress label feed. Allowing an initial label feed will align the print head to the leading edge of die-cut label stock.

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Intermec Cables

9 Pin Cable Configuration 25 Pin Cable Configuration

9 Pin Cable Configuration

25 Pin Cable Configuration

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Intermec Notes

RS - 232 Communications	getstatus useprinter Status Messages	Resetting the Printer
MaxiCode	Print Speed and Image Bands	Trailing Edge Violations

RS-232 Communications

- Data Bits - 8
- Stop Bits - 1
- Parity - None
- Protocol - XON/XOFF - NO STAT

NOTE: The Intermec 4100 printer uses XON/XOFF for its protocol.

getstatus useprinter Status Messages

Resetting the Printer

All Intermec printers will automatically reset at print time if any of the following parameters are changed within the software:

1. Media Type

2. Print Mode

3. Cutter Option

Intermec 4400 If 'Printer Status' is not available from within the print queue, a 'Hardware Reset' must be executed. Select the 'Hardware Reset' option from the Print Queue Menu. Once the 4400 has been reset, factory default settings will be restored. If the printer was configured for any settings other than the factory defaults, these settings must now be set again in the printers front panel.

MaxiCode

When using MaxiCode with Intermec printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

data... = Alphanumeric Data (maximum length: 84 characters)

Example: 123999#442120798#This is an example.

Print Speed and Image Bands

The print speed and image bands determine the rate at which the printer processes the images of your labels. In the printer, label printing and image processing occur simultaneously. For this reason, it is very important that these settings be synchronized. If the Image Band command is too low, the imaging process is unable to keep up with the print speed. In this case, the printer stops printing and starts again at the lowest print speed. If the Image Band command is set too high, the printer spends too much time imaging, which slows down label production.

To optimize the number of image bands for your print speed, set the image bands at the lowest number and then print a label at the desired speed. If the label prints, the Image Band setting is correctly optimized.

To optimize the number of image bands for batch printing, you must select enough image memory to allow the printer to retain the entire label image PLUS ONE INCH (one image band is equal to 1 inch). Therefore, if the printed image stops at a distance of 4 inches from the beginning of the label, you must select five image bands to prevent re-imaging.

Trailing Edge Violations

Trailing Edge violations more easily occur on small (under 1" tall) labels because of the limited space on the label. These violations result in print "wandering" up or down the label. The print will often move farther and farther down the label until it actually crosses the inter-label gap. This is followed by a blank label or two and then the process is repeated. The absolute minimum margin is 1/8" (0.125

inches). To avoid causing a Trailing Edge violation, do not exceed the absolute minimum margin.

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Novexx

Novexx Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Port	Concurrent Access	Handshake
Baud Rate	Direct Print	Cutter	Calendar Option
Set Printer Darkness			

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Enter the port to which the printer is attached.

Concurrent Access

Select Concurrent Access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, deselect Concurrent Access. This option appears for those printers that can be configured for serial printing.

Handshake

Select 'Yes' to use a hardware handshake. Select 'No' to use an XON/XOFF handshake.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

NOTE: Always make sure the Baud Rate is the same as your printer setup.

Direct Print

Select Direct Print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95,98, or ME.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Calendar Option

Select 'Yes' if your printer has the calendar option (clock chip) installed. This will allow formats that contain date/time fields to be handled internally in the printer and be updated to reflect the current date/time when the label is printed. Select 'No' to download the date/time from the program.

Set Printer Darkness

Select 'Yes' to allow software to set printer darkness. This will override any darkness setting defined in the printer. Select 'No' to use printers darkness setting.

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Novexx Cables

Lion, Puma, Tiger, Tiger XXL and XXtreme 9 Pin Cable Configuration	Lion, Puma, Tiger, Tiger XXL and XXtreme 25 Pin Cable Configuration

Lion, Puma, Tiger, Tiger XXL and XXtreme 9 Pin Cable Configuration

Lion, Puma, Tiger, Tiger XXL and XXtreme 25 Pin Cable Configuration

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Novexx Notes

RS - 232 Communications

RS - 232 Communications

Data Bits: 8

Stop Bits: 1

Parity: None

Handshake: RTS/CTS Standard

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Printronix

Printronix Setup

Printer Name	Printer Description	Printer Manufacturer

Printer Model	Type of Port	Port
Concurrent Access	Use Hardware Handshake	Direct Print
Printer Memory	Cutter	Set Printer Clock
Darkness Adjustment	Offset Adjustment	Initial Label Feed
RFID Enabled		

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

Use Hardware Handshake

Select 'Yes' to use a hardware handshake. Select 'No' to use an XON/XOFF handshake.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Printer Memory

If a memory cartridge is installed, select the option corresponding to the memory module that is inserted into the top cartridge slot.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Set Printer Clock

Select 'Yes' to set the printer clock to match the computer clock. Select 'No' to NOT set the printer clock to match the computer clock.

Darkness Adjustment

Enter a number from -4 through +4 to adjust the base level of print darkness. Negative numbers make the print lighter.

Offset Adjustment

Adjust the form edge offset. Offset adjustment is the number from -99 to +999 needed to change the formats starting print position. Negative numbers will move the starting position down from the top of the format. Positive numbers will move the starting position up towards the top of the format.

Initial Label Feed

Allow blank label feed before printing first job or suppress label feed. Allowing an initial label feed will align the print head to the leading edge of die-cut label stock.

RFID Enabled

Select 'Yes' if the printer has RFID capability.

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Printronix Cables

9 Pin Cable Configuration	25 Pin Cable Configuration	Western Telematic Switchbox - 41 - Dip Switches
Western Telematic Switchbox - 41a - Dip Switches	Western Telematic Switchbox - 81c - Dip Switches	Western Telematic Switchbox - 161a - Dip Switches
Western Telematic Switchbox - 41, 41a, 161a Cable Configuration	Western Telematic Switchbox - 81c Cable Configuration	Western Telematic Switch Box Printer Assignments

9 Pin Cable Configuration

25 Pin Cable Configuration

Western Telematic Switch Boxes

You have the ability to increase the number of printers you can drive with your PC by using a Western Telematic CAS-41 4-way switch box, a Western Telematic CAS-81 8-way switch box or a Western Telematic CAS-161A 16-way switch box. These switching devices may be obtained from:

WESTERN TELEMATIC, INC.
5 Sterling
Irvine, CA 92718 USA
714.586.9950 • 800.854.7226
Fax: 714.583.9514
www.wti.com

If you are using a Western Telematic Switch, formats that contain TrueType font text fields cannot be downloaded as a font to the printer through the Western Telematic Switch Box. The Western Telematic does not allow TrueType fonts to be downloaded. When using TrueType font text fields on a format and a Western Telematic Switch, you must download the font as a graphic.

Western Telematic Switchbox - 41 - Dip Switches

NOTE: When using a CAS-41 or 41A, move all four jumpers down one position so that the "DTR" lines printed on the circuit board are not pointing at the jumpers.

Western Telematic Switchbox - 41a - Dip Switches

NOTE: When using a CAS-41 or 41A, move all four jumpers down one position so that the "DTR" lines printed on the circuit board are not pointing at the jumpers.

Western Telematic Switchbox - 81c - Dip Switches

The CAS - 81C 8-way Switch Box is equipped with a set of 8 position or 10 position Dip Switches as follows:

NOTE: When purchasing the CAS-81c 8-way switchbox, it must be equipped with firmware version 1.0a.

Western Telematic Switchbox - 161a - Dip Switches

Western Telematic Switchbox - 41, 41a, 161a Cable Configuration

Western Telematic Switchbox - 81c Cable Configuration

Western Telematic Switch Box Printer Assignments

If a third CAS-41 Code Activated Switch is connected to the PC above, printer assignments would be 9 through 12. The same would be true for the CAS-161A, where the first switch box would go to Printers 1 through 16, the second switch box would go to Printers 17 through 32 and if a third switch box is connected, it would go to Printers 33 through 48.

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Printronix Notes

RS - 232 Communications	Memory Card Installation	MaxiCode

RS - 232 Communications

Data Bits - 8

Stop Bits - 1

Parity - None

Protocol - XON/XOFF - NO STAT

NOTE: The ThermaLine T3306 has two serial ports. Serial Port A is the default serial port on the printer. Be sure to connect the serial cable to Port A when configured for Serial printing.

Memory Card Installation

The ThermaLine T3306 has an optional 1 MB or 2MB memory cartridge.

To install a memory cartridge:

1.) Insert a 1 MB or 2MB memory cartridge into the top cartridge slot in the T3306.

NOTE: The software only recognizes the top slot.

2.) Configure the software to recognize the cartridge.

- Choose File | Printer Setup.
- Choose Printronix ThermaLine T3306 as your printer model.
- Select Printer RAM, from the Options Tab, and specify the memory cartridge that you have.

MaxiCode

When using MaxiCode with Printronix printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

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RJS

RJS Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Port	Concurrent Access	Baud Rate
Direct Print	Cutter	Darkness Adjustment	

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the model of printer to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Enter the port to which the printer is attached.

Concurrent Access

Select Concurrent Access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known deselect Concurrent Access. This option appears for those printers that can be configured for serial printing.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

Direct Print

Select Direct Print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95,98, or ME.

Cutter

elect Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Darkness Adjustment

Enter a number from -10 through +10 to adjust the base level of print darkness. Negative numbers make the print lighter. This screen only appears for the RJS Qualibar 440 and 450

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RJS Cables

Thermabar - 9 Pin Cable Configuration	Thermabar - 25 Pin Cable Configuration
Qualabar - 9 Pin Cable Configuration	Qualabar - 25 Pin Cable Configuration

Thermabar - 9 Pin Cable Configuration

Thermabar - 25 Pin Cable Configuration

Qualabar - 9 Pin Cable Configuration

Qualabar - 25 Pin Cable Configuration

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RJS Notes

Printable Characters	Field Direction	Stacked Fields	Void & Reprint
Printing a Set of Formats	Print Head Temperature	True Type Fonts	Intercharacter Space
Thermabar RS-232 Communications	Thermabar RS-232 Communications Dip Switches	Thermabar Parallel/Centronix Dip Switches	Qualabar RS-232 Communications
Qualabar RS-232	Qualabar Parallel/Centronix		

Communications Dip Switches	Dip Switches		

Printable Characters

The software allows you to define character heights and widths. A printer problem exists for characters larger than about 3/4". Printing width characters approaching 3/4" or greater may cause erratic results. Characters may disappear, strange lines may appear, or the printer may lock if larger characters are used.

Font H - Tipton Gothic font should not be used on a format where the Print Area Height is greater than 10 inches.

Field Direction

- Tipton Gothic (Fixed) allows Left to Right field orientation only.
- Tipton Gothic (Proportional) allows Left to Right field orientation only.
- Rotatable allows Normal field orientation only.
- All other internal printer fonts allow Normal and Stacked field orientations.
- TrueType fonts allow Normal and Stacked field orientations.

Stacked Fields

Stacked fields are fields where characters are printed below one another instead of next to one another. To allow for this on the RJS, you are presented with a choice for Normal or Stacked Letter Orientation. When a Stacked Letter Orientation is selected, you can choose from 4 different stacked Field Directions. Stacked fields are not supported with Font H - Tipton Gothic (Fixed), Font I - Tipton Gothic (Proportional), Font J - Rotatable and TrueType fonts.

Void & Reprint

The RJS printer is designed to verify up to 15 bar codes as they are printed. The printer will verify bar codes in orientations 1 and 3, Picket Fence only. Bar codes in orientations 2 and 4, Step Ladder, will not verify.

The Void and Reprint option will enable or disable bar code verification.

If enabled, any labels with invalid bar codes will have a checkerboard pattern printed over the invalid bar code. The printer will then try to reprint the label up to 3 times. If more than 3 invalid labels are printed, the printer will lock up and must be reset by turning the printer off and then on again or by pressing the Red Reset button located inside the printer.

Printing a Set of Formats

When using a Command File to print you formats, all jobs will be released to the printer immediately rather than being held in the print queue.

If you turn the printer off for any reason, you must exit the program and restart it so the printer will re-initialize.

The RJS printer limits you to 32 serialized (incremented) fields on a format. Bar code fields with interpretations count as two since both the bar code and the interpretation must be serialized.

Lines will automatically reverse when crossing another field. If a line that doesn't reverse when crossing another is needed, use a rectangle field. The edge lines on boxes overwrite any other field they come in contact with. Add a rectangle and place it on the format as you would place a line. Then, adjust the thickness of the box edge lines so that two sides of the box come together. This will create a solid line on the label.

Print Head Temperature

The print head temperature can be automatically adjusted for each bar code in orientations 1 and 3, picket fence. Enter 'Y' to automatically adjust the print head temperature to keep this bar code within specification. Enter 'N' to disable both automatic print head temperature adjustment and verification for this bar code.

TrueType Fonts

TrueType fonts on the RJS printers are supported on the Text Field definition screen. Fields that use TrueType fonts are sent to the printer as a graphic.

Intercharacter Space

This option allows you to specify the space between each character based on a dot size of .005 inches. If more or less spacing is desired, this number can be adjusted accordingly. The default setting is 2 dots, or .01 inches and should be appropriate for most text fields. The maximum setting that can be specified is 500 dots or 2.5 inches.

Thermabar

RS-232 Communications

The following settings are needed for serial communications for RJS ThermaBar 260 and 285 printers:

- Data Bits: 8
- Stop Bits: 1
- Parity: None

- Handshake: RTS/CTS

RS-232 Communications Dip Switches

Parallel/Centronix Dip Switches

QualaBar

RS-232 Communications

The following settings are needed for serial communications for RJS QualaBar 440 and 450 printers:

- Data Bits: 8
- Stop Bits: 1
- Parity: None
- Handshake: XON/XOFF

RS-232 Communications Dip Switches

The switches are labelled closed and open. Closed means that the switch is on and open means that the switch is off. For the switch to be on, or closed, the switch is toward the front of the printer.

Parallel/Centronix Dip Switches

For parallel printing, there are no special switch settings required. The Qualibar 450 automatically configures for parallel printing when a parallel cable is attached to the printer. The Qualibar 440 does not support parallel printing.

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Sato

Sato Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
S Model	Type of Port	Port	Concurrent Access

Bidirectional	Baud Rate	Device Attached	Printer Address
Direct Print	Printer Memory	Cutter	Calendar Option
Set Printer Clock	Firmware Level	Set Printer Darkness	Set Printer Speed
	RFID Enabled		

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used.

S Model

If the printer is an S Model select S Model Printer from the Options tab, otherwise deselect S Model printer.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

Bidirectional

If you are using a serial cable you can select Bidirectional to use printer protocol STATUS 2 or STATUS 4 and a BIDIRECTIONAL cable. Deselect Bidirectional to use printer protocol PC1 RS ON/OFF and a DTR cable

The software does not differentiate between the protocols STATUS 2 or STATUS 4.

If you are using a parallel cable you can select Bidirectional to enable Status and the Cancel command with a parallel cable. The printer must have the multi-buffer toggle turned on. This option is only available on the E series printers.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

Device Attached

Select the type of device that is attached to the port. The choices are Printer, Western Telematic 4-way Switch, 8-way Switch, or 16-way Switch.

Printer Address

When configuring a printer that is attached to a Western Telematic Switch Box, enter the number on the switch box that the printer is connected to.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Printer Memory

This option allows you to define which card slot the memory card is connected to. Memory card options vary based on the printer used. This item only appears when configuring for a CL408, a CL412, a CL608 or a CL612.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Calendar Option

Select 'Yes' if your printer has the calendar option (clock chip) installed. This will allow formats that contain date/time fields to be handled internally in the printer and be updated to reflect the current date/time when the label is printed. Select 'No' to download the date/time from the program.

Set Printer Clock

Select 'Yes' to set the printer clock to match the computer clock. Select 'No' to NOT set the printer clock to match the computer clock.

Firmware Level

Select 'Yes' if the printer is installed with ROM versions 1E1010 and 2E1010 or higher. Otherwise, enter N. The Firmware Level screen item only appears if the printer attached is a Sato Model CL608 or Model 8480s.

Set Printer Darkness

Select 'Yes' to allow software to set printer darkness. This will override any darkness setting defined in the printer. Select 'No' to use printers darkness setting.

Set Printer Speed

Select 'Yes' to allow software to set printer speed. This will override any print speed defined in the printer. Select 'No' to use printer's speed setting.

RFID Enabled

Select 'Yes' if the printer has RFID capability.

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Sato Cables

9 Pin Cable Configuration	25 Pin Cable Configuration	Bidirectional - 9 Pin Cable Configuration
Bidirectional - 25 Pin Cable Configuration	Western Telematic Switchbox - 41 - Dip Switches	Western Telematic Switchbox - 41a - Dip Switches
Western Telematic Switchbox - 81c - Dip Switches	Western Telematic Switchbox - 161a - Dip Switches	Western Telematic Switch Box Printer Assignments
Western Telematic Switchbox - 41, 41a Cable Configuration	Western Telematic Switchbox - 161a Cable Configuration	Western Telematic Switchbox - 81c - 9 Pin Cable Configuration
Western Telematic Switchbox - 81c - 25 Pin Cable Configuration	Setup for Sato 8400/6 and 8400/8	Setup for Sato 8400, 8400RV and 8450
Setup for Sato CL608 and 8480s	Setup for Sato CL612	Setup for Sato CL408 and CL412
Parallel Printing	Internal Time Stamp	Multi-Buffer

9 Pin Cable Configuration

25 Pin Cable Configuration

Bidirectional - 9 Pin Cable Configuration

In order to support the Cancel command from the Sato printer, the software must be configured for Bidirectional printing. Configuration for bidirectional printing is done as follows:

- Select Bidirectional in the printer setup.
- You must have a Bidirectional cable attached.
- The printer protocol must be set for Status 2 or 4

In order for the Cancel command to properly function, the following should be noted:

- Jobs in the Print Queue, which have a graphic, must be in a Frozen Status. Then, subsequent jobs will need to be Unfrozen as needed.
- Jobs in the print queue, which do not have a graphic, can be in a Frozen or Unfrozen state.

Bidirectional - 25 Pin Cable Configuration

In order to support the Cancel command from the Sato printer, the software must be configured for Bidirectional printing. Configuration for bidirectional printing is done as follows:

- Select Bidirectional in the printer setup.
- You must have a Bidirectional cable attached.
- The printer protocol must be set for Status 2 or 4

In order for the Cancel command to properly function, the following should be noted:

- Jobs in the Print Queue, which have a graphic, must be in a Frozen Status. Then, subsequent jobs will need to be Unfrozen as needed.
- Jobs in the print queue, which do not have a graphic, can be in a Frozen or Unfrozen state.

Western Telematic Switch Boxes

You have the ability to increase the number of printers you can drive with your PC by using a Western Telematic CAS-41 4-way switch box, a Western Telematic CAS-81 8-way switch box or a Western Telematic CAS-161A 16-way switch box. These switching devices may be obtained from:

WESTERN TELEMATIC, INC.
5 Sterling
Irvine, CA 92718 USA
714.586.9950 • 800.854.7226
Fax: 714.583.9514
www.wti.com

Western Telematic Switchbox - 41 - Dip Switches

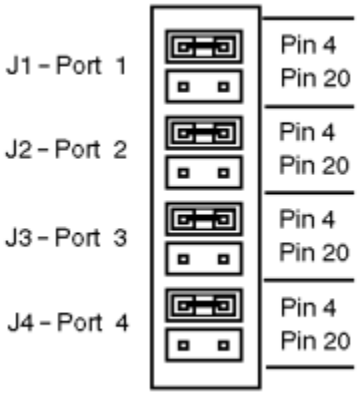
Western Telematic Switchbox - 41a - Dip Switches

Western Telematic Switchbox - 41a - Changing Monitor Pins

The four internal jumpers located on the CAS-41A circuit board are used to switch the CAS-41A to monitor pin 4 (Request to Send) instead of pin 20 (factory setting). To switch monitor pins, proceed as follows:

CAUTION: Make certain to power off the CAS-41A and disconnect the power cable before attempting to remove the instrument cover.

1. Remove the four screws that secure the CAS-41A's plastic cover to the chassis. Remove the cover from the chassis.
2. Locate the jumpers on the CAS-41A circuit board. As you face the instrument back panel, the jumpers are located in the lower left hand corner of the circuit board. Move the jumpers as shown to monitor pin4.
3. Replace the plastic cover on the CAS-41A chassis. Reinstall the four screws that secure the cover to the chassis. Reconnect the power cable and switch the power on.



Western Telematic Switchbox - 81c - Dip Switches

The CAS - 81C 8-way Switch Box is equipped with a set of 8 position or 10 position Dip Switches as follows:

NOTE: When purchasing the CAS-81c 8-way switchbox, it must be equipped with firmware version 1.0a.

On the inside of the box, a set of jumpers located behind the 25-pin port are labeled CTS and DCD. In order to have proper handshaking, the CTS jumper should be set so that both pins are covered and the DCD jumper should be set so that only one pin is covered.

Western Telematic Switchbox - 161a - Dip Switches

Western Telematic Switch Box Printer Assignments

If a third CAS-41 Code Activated Switch is connected to the PC above, printer assignments would be 9 through 12. The same would be true for the CAS-161A, where the first switch box would go to Printers 1 through 16, the second switch box would go to Printers 17 through 32 and if a third switch box is connected, it would go to Printers 33 through 48.

Western Telematic Switchbox - 41, 41a Cable Configuration

Western Telematic Switchbox - 161a - 9 Pin Cable Configuration

Western Telematic Switchbox - 161a - 25 Pin Cable Configuration

Western Telematic Switchbox - 81c - 9 Pin Cable Configuration

Western Telematic Switchbox - 81c - 25 Pin Cable Configuration

Setup for Sato 8400/6 and 8400/8

Serial (RS-232) Communication settings are:

- Data Bits: 8
- Stop Bits: 1
- Parity: None
- Codes: Standard
- Protocol: PC1 RS ON/OFF

Sato 8400 printer family: It is recommended that the Receive Buffer Size, on the front panel of the printer, be set to 1-Item Buffer. When the printer is set to 1-Item Buffer, the printer will process one print job at a time and will remain busy until completion of that job.

Setup for Sato 8400, 8400RV and 8450

Serial RS-232 Communication settings are:

- 8 Data Bits
- No Parity
- 1 Stop Bit
- Standard Codes
- PC1 RS ON/OFF Protocol

8450: The "Dot Expansion" setting on the Label Setup screen in the software, will override the "Dot Expansion" setting on the printer's front panel under <Mode S Options>.

Sato 8400 printer family: It is recommended that the Receive Buffer Size, on the front panel of the printer, be set to 1-Item Buffer. When the printer is set to 1-Item Buffer, the printer will process one print job at a time and will remain busy until completion of that job.

Setup for Sato CL608 and 8480s

Serial RS-232 Communication settings are:

- Data Bits: 8
- Stop Bits: 1
- Parity: None
- Handshake: Ready/Busy

Sato 8400 printer family: It is recommended that the Receive Buffer Size, on the front panel of the printer, be set to 1-Item Buffer. When the printer is set to 1-Item Buffer, the printer will process one print job at a time and will remain busy until completion of that job.

The above configuration sets the printer for 19200 baud. Turn Dip Switch 3-3 (Pitch Sensor) ON if you are using continuous media. On the Sato 8480s, turn Dip Switch 3-5 (Print Start Signal) ON if you are not using an applicator.

Refer to the SATO CL608 or the SATO 8480s printer manual for more information on Dip Switch settings.

Setup for Sato CL612

Serial (RS-232) Communication settings are:

- Baud: 9600 bps

- Data Bits: 8
- Stop Bits: 1
- Parity: None
- Handshake: Ready/Busy

The above configuration sets the printer for 9600 baud, 8 data bits, no parity, and 1 stop bit. Turn Dip Switch 3-3 (Pitch Sensor) on if you are using continuous media.

Refer to the SATO CL612 printer manual for more information on Dip Switch settings.

Setup for Sato CL408 and CL412

The above configuration sets the printer for 9600 baud, 8 data bits, no parity, and 1 stop bit. Turn Dip Switch 3-3 (Pitch Sensor) on if you are using continuous media.

Refer to the SATO CL408 or the SATO CL412 printer manual for more information on Dip Switch settings.

Parallel Printing

For Parallel printing, there are no special configuration settings needed. The SATO CL612, CL408, and CL412 printers automatically configure for parallel printing when a parallel cable is attached to the printer.

For Bidirectional Parallel printing the printer must be set to multi-buffer and the Software's Bidirectional option must also be enabled.

Internal Time Stamp

Allows formats with a time stamp to be printed in real time using the printers internal time stamp. To use this function the printer must be equipped with a clock chip.

Refer to your printer manual for setup on Sato models 8490, 8485 S-L, and 8485 S-R.

Multi-Buffer

Typically used to enable Bidirectional Parallel printing with the Software's Bidirectional option enabled. This allows for Status and the Cancel command with a parallel cable.

Can also be used with Serial printing and the standard Ready/Busy cable in print and apply applications where one job is sent to the printer and at some point the job will need to be cancelled. Should not be used this way if stacking multiple jobs in the queue, since all jobs will be fed into the printer and the Cancel command will cancel all jobs.

Multi-Buffer Settings:

- Baud: 9600 bps
- Data Bits: 8
- Stop Bits: 1
- Parity: None
- DSW 1-2, 8 ON
- DSW 2-5 ON

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Sato Notes

True Type Fonts Maxicode

TrueType Fonts

TrueType fonts on the Sato printers are supported on the Text Field definition screen. Fields that use TrueType fonts are sent to the printer as a graphic.

Maxicode

When using Maxicode with Sato printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

data... = Alphanumeric Data (maximum length: 84 characters)

Example:

123999#442120798#This is an example.

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Synergystex

Synergystex Setup

Printer Name	Printer Description	Printer Manufacturer
Printer Model	Port Type	Port
Upper Case International	Bar Code Verification	Downloaded Fonts
Printable Characters	Vertical Separation	Bar Width Multipliers

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Upper Case International

Enables uppercase International Characters. Selecting this option protects International Characters with uppercase ascenders (accent marks, umlauts, etc.) from being omitted when the top of that character is placed along the outside edges of a format. Please be aware that this option will move the field away from the outside edge of the printed label.

Bar Code Verification

Bar codes were tested with the printer's darkness control set to 2.5 and 3. Refilled cartridges had varying results. All bar codes were verified as being in "spec" in all resolutions using a Quick Check IV verifier.

Downloaded Fonts

A record is kept of what fonts have been sent to the printer. If for any reason the printer is turned off during the course of a day's work, you should exit the program and then restart the program by double-clicking on the icon.

Printable Characters

Overall character height including lower case descenders must be taken into account when deciding what can print on a page. Therefore, the maximum character height that could print on an 11" form with a print area height of 10.59" is 7.99".

Any field that would be off the format due to the lower case characters is automatically moved up even if lower case is not used.

Vertical Separation

The distance in one-sixth or one-eighth inch increments from the top of one format to the top of the next one down. Maximum vertical separation is 33.0". To specify from zero to seven- eighths inch or zero to five-sixths inch, use the following decimal equivalents:

0 eighths = .0" 0 sixths = .0"

1 eighth = .12" 1 sixth = .17"

2 eighths = .25" 2 sixths = .33"

3 eighths = .37" 3 sixths = .5"

4 eighths = .5" 4 sixths = .67"

5 eighths = .62" 5 sixths = .83"

6 eighths = .75"

7 eighths = .87"

Examples:
1) If vertical spacing is 4 and 3/8", enter 4.37". Print area height will then be 4.25" or less.
2) If vertical spacing is 2 and 1/4", enter 2.25". Print area height could be as much as 2.13".
3) If vertical spacing is 1/2" or 1", use .5" or 1.0".

Bar Width Multipliers

This function allows you to establish the density of your bar code. Everything revolves around the dot size that the laser printer can print. The dot size that the laser can print is 3.3 Mils.

Example:
UPC printed in 100% magnification has a 13 Mil narrow bar. To achieve this you would use a multiplier of 3 which would give you approximately 102% magnification.

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TEC

TEC Setup

Printer Name	Printer Description	Printer Manufacturer
Printer Model	Type of Port	Port
Concurrent Address	Baud Rate	Cutter

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Concurrent Address

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

NOTE: Always make sure the Baud Rate is the same as your printer setup.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

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TEC Cables

9 Pin Cable Configuration 25 Pin Cable Configuration

9 Pin Cable Configuration

25 Pin Cable Configuration

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TEC Notes

MaxiCode 2D Barcodes B-872

MaxiCode

When using MaxiCode with TEC printers that support it, data must be entered in the following format:

123456789SSSCCCdata...

Where:

SSS = Service Code

CCC = Country Code

123456789 = Zip Code + 4 Digit Extension (optional)

data... = Alphanumeric Data (maximum length: 84 characters)

2D Barcodes

If 2D barcodes do not print, contact TEC for the latest version of firmware to correct this problem.

B-872

If the top of the format is being cut off, change the feed adjustment on the printer's front panel to positive values as needed.

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TSC

TSC Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Port	Concurrent Access	Use Hardware Handshake
Baud Rate	Cutter	Set Printer Darkness	Set Printer Speed
Initial Label Feed			

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing

Use Hardware Handshake

Select 'Yes' to use a hardware handshake. Select 'No' to use an XON/XOFF handshake.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

NOTE: Always make sure the Baud Rate is the same as your printer setup.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Set Printer Darkness

Select 'Yes' to allow software to set printer darkness. This will override any darkness settings defined in the printer. Select 'No' to use the printers darkness settings.

Set Printer Speed

Select 'Yes' to allow the software to set printer speed. This will override any print speed settings defined in the printer. Select 'No' to use the printers speed settings.

Initial Label Feed

Allow blank label feed before printing first job or suppress label feed. Allowing an initial label feed will align the print head to the leading edge of die-cut label stock.

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TSC Cables

9 - Pin Cable Configuration

Tharo

Gemini

Gemini, Gemini 2 and A2 Gemini Setup

Printer Name	Printer Description	Printer Manufacturer
Printer Model	Type of Port	Port
Direct Print	Darkness Adjustment	Paper/Ribbon Out

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the model of printer to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached. For Parallel printing, available choices are LPT1, LPT2, and LPT3.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Darkness Adjustment

Enter a number from -4 to 4 to adjust the base level of print darkness. Negative numbers make the print lighter.

Paper/Ribbon Out

While printing, a situation may occur where the Gemini will run out of label or ribbon stock. When this occurs, a message dialog box will appear explaining that there is an error on the printer. The type of error condition and the number of unprinted labels will be displayed along with the following message:

Please correct the printer error then Press OK.

After replacing the paper or ribbon stock, click OK. The printer will automatically resume printing.

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Gemini Notes

Format Specification Options	Paper/Ribbon Out Condition	True Type Fonts

Format Specification Options

Select No if transfer printing with a ribbon. Select Yes if printing on thermal paper without a ribbon.

Paper/Ribbon Out Condition

While printing, a situation may occur where the Gemini will run out of label or ribbon stock. When this occurs, a message dialog box will appear explaining that there is an error on the printer. The type of error condition and the number of unprinted labels will be displayed along with the following message:

Please correct the printer error then Press OK.

After replacing the paper or ribbon stock, click OK. The printer will automatically resume printing.

True Type Fonts

TrueType fonts on the Gemini printers are supported on the Text Field definition screen.

Tharo Setup (Includes 112, 112 Plus, Freedom, Magic, Orion, Wizard, and Hercules)

Printer Name	Printer Description	Printer Manufacturer	Printer Model	Type of Port
Port	Use Hardware Handshake	Concurrent Access	Baud Rate	Device Attached
Printer Address	Printer Memory	Direct Print	Cutter	Darkness Adjustment
Offset Adjustment	Translucent Ribbon	Initial Label Feed		

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used.

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Select the port to which the printer is attached.

Use Hardware Handshake

Select 'Yes' to use a hardware handshake. Select 'No' to use an XON/XOFF handshake.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

NOTE: Always make sure the Baud Rate is the same as your printer setup.

Device Attached

Select the type of device that is attached to the port. The choices are Printer, Western Telematic 4 –way, Switch, 8– way Switch, or 16 – way Switch.

Printer Address

When configuring a printer that is attached to a Western Telematic Switch Box, enter the number on the switch box that the printer is connected to.

Printer Memory

If a memory cartridge is installed, select the option corresponding to the memory module that is inserted into the top cartridge slot. A memory module is required in the Tharo 112 printer to store picture information and TrueType fonts. If the memory module is not present, the printer will still work, but any graphic that is downloaded, will not be printed.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Darkness Adjustment

Adjust the base level of print darkness. Negative numbers make the print lighter.

Offset Adjustment

Adjust the form edge offset. Offset adjustment is the number from -99 to +999 needed to change the formats starting print position. Negative numbers will move

the starting position down from the top of the format. Positive numbers will move the starting position up towards the top of the format.

Translucent Ribbon

Allows you to configure for colored ribbons with an opaque trailer. If translucent ribbon is selected, the logic of the ribbon out sensor is reversed so that with the proper ribbon, you will be able to run the printer in thermal transfer mode and get a proper 'Ribbon Out' indication.

Initial Label Feed

Allow blank label feed before printing first job or suppress label feed. Allowing an initial label feed will align the print head to the leading edge of die-cut label stock.

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Tharo Cables (Includes 112, 112 Plus, Freedom, Magic, Orion, Wizard, and Hercules)

9 Pin Cable Configuration	25 Pin Cable Configuration	9 Pin Cable Configuration (Orion)
25 Pin Cable Configuration (Orion)	Western Telematic Switchbox - 41 - Dip Switches	Western Telematic Switchbox - 41a - Dip Switches
Western Telematic Switchbox - 81c - Dip Switches	Western Telematic Switchbox - 161a - Dip Switches	Western Telematic Switchbox - 41, 41a, 161a Cable Configuration
Western Telematic Switchbox - 81c Cable Configuration	Western Telematic Switch Box Printer Assignments	

9 - Pin Cable Configuration

25 - Pin Cable Configuration

9 - Pin Cable Configuration (Orion)

25 - Pin Cable Configuration (Orion)

Western Telematic Switch Boxes

You have the ability to increase the number of printers you can drive with your PC by using a Western Telematic CAS-41 4-way switch box, a Western Telematic CAS-81 8-way switch box or a Western Telematic CAS-161A 16-way switch box. These switching devices may be obtained from:

WESTERN TELEMATIC, INC.
5 Sterling
Irvine, CA 92718 USA
714.586.9950 • 800.854.7226
Fax: 714.583.9514
www.wti.com

If you are using a Western Telematic Switch, formats that contain TrueType font text fields cannot be downloaded as a font to the printer through the Western Telematic Switch Box. The Western Telematic does not allow TrueType fonts to be downloaded. When using TrueType font text fields on a format and a Western Telematic Switch, you must download the font as a graphic.

When configured for a Tharo printer, you can configure the software to send TrueType fonts as a graphic by specifying N for the "Download Fonts" screen item in the Format Specification Screen

Western Telematic Switchbox - 41 - Dip Switches

NOTE: When using a CAS-41 or 41A, move all four jumpers down one position so that the "DTR" lines printed on the circuit board are not pointing at the jumpers.

Western Telematic Switchbox - 41a - Dip Switches

NOTE: When using a CAS-41 or 41A, move all four jumpers down one position so that the "DTR" lines printed on the circuit board are not pointing at the jumpers.

Western Telematic Switchbox - 81c - Dip Switches

The CAS - 81C 8-way Switch Box is equipped with a set of 8 position or 10 position Dip Switches as follows:

NOTE: When purchasing the CAS-81c 8-way switchbox, it must be equipped with firmware version 1.0a.

Western Telematic Switchbox - 161a - Dip Switches

Western Telematic Switchbox - 41, 41a, 161a Cable Configuration

Western Telematic Switchbox - 81c Cable Configuration

Western Telematic Switch Box Printer Assignments

If a third CAS-41 Code Activated Switch is connected to the PC above, printer assignments would be 9 through 12. The same would be true for the CAS-161A, where the first switch box would go to Printers 1 through 16, the second switch box would go to Printers 17 through 32 and if a third switch box is connected, it would go to Printers 33 through 48.

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Tharo Notes (Includes 112, 112 Plus, Freedom, Magic, Orion, Wizard, and Hercules)

MaxiCode

MaxiCode

When using Maxicode with Tharo printers that support it, data must be entered in the following format:

CCCSSS#ZZZZZXXXX#data...

Where:

CCC = Country Code

SSS = Service Code

ZZZZZXXXX = Zip Code + 4 Digit Extension (optional)

(Must be enclosed in # signs)

data... = Alphanumeric Data (maximum length: 84 characters)

Example:

123999#442120798#This is an example.

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Windows

Windows Setup

Installing a Windows Printer	Defining a Windows Printer	Postscript Printers

Installing a Windows Printer

Before designing a format for a Windows printer, the printer must be installed from within Windows.

To install a Windows printer driver, follow these steps:

- Choose Start | Settings | Printers.
- Double-click "Add Printer".
- Follow the instructions in the "Add Printer Wizard".

Defining Printer Configuration

Windows printer configuration settings can only be modified from within Windows. To view, add, change or delete current printer configuration options, choose Start | Settings | Printers and double-click on the correct printer.

Postscript Printers

The software supports Windows Postscript printers. They must be installed in the same manner as a regular Windows Printer. See above.

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Windows Notes

Upper Case International	LaserJet Communications	Bar Code Verification	Downloaded Fonts
Compatible Printers	Paper Size	Bar Width Multipliers	Field Direction
Printing a Set of Formats			

Upper Case International

Enables uppercase International Characters. Selecting this option protects International Characters with uppercase ascenders (accent marks, umlauts, etc.) from being omitted when the top of that character is placed along the outside edges of a format. Please be aware that this option will move the field away from the outside edge of the printed label.

LaserJet Communications

The HP LaserJet Series II, IIP, III, IV, and V should be set to factory defaults. The only exception being Parallel I/O.

Following are the specific settings which were tested:

- Auto Continue = Off
- Symbol Set = Roman - 8
- Copies = 1
- Manual Feed = Off
- Font Source = I
- Font Number = 00
- Form = 60 Lines
- Parallel I/O

Refer to your HP LaserJet Printer Manual for information on how to configure your printer and how to print a self test.

Bar Code Verification

Bar codes were tested using an original HP cartridge with the printer's darkness control set to a five (5). Refilled cartridges had varying results. All bar codes were verified as being in "spec" in all resolutions using a Quick-Check IV verifier.

Downloaded Fonts

A record is kept of what fonts have been sent to the printer. If for any reason the printer is turned off during the course of a day's work, you should exit the program and then restart it.

Compatible Printers

Many "compatible" laser printers were found to be less than 100% compatible with the LaserJet Series II. It is recommended that you use an HP printer or that you test the printer thoroughly before you make a purchase. LaserJet Plus emulation is not enough. It must be LaserJet Series II compatible or higher.

Printable Characters

Overall character height including lower case descenders must be taken into account when deciding what can print on a page. Therefore, the maximum character height that could print on an 11" form with a print area height of 10.59" is 7.99".

Any field that would be off the format due to the lower case characters is automatically moved up even if lower case is not used.

Paper Size

Paper width can be defined to be as large as 19.68". A legal size paper tray is needed to print 8 ½" x 14" formats. The printer must also be set to "Paper=Legal".

Please refer to your HP LaserJet Printer Manual for more information on how to set this option.

Bar Width Multipliers

This function allows you to establish the density of your bar code. Everything revolves around the dot size that the laser printer can print. The printable dot size is 3.3 Mils.

Example:
UPC printed in 100% magnification has a 13 Mil narrow bar. To achieve this you would use a multiplier of 4 which would give you approximately 102% magnification.

Field Direction

If you are printing to an HP LaserJet Series II, bar codes can be designed and printed in orientations 1 and 4, however, bar codes in orientation 4 can not print the human readable interpretation.

Printing a Set of Formats

You can use the software in a demand mode when you only need one replacement label at a time. On the Print Request Screen, you can specify the starting print position in which to begin printing formats on your sheet of labels. This will allow you to remove labels one at a time from the sheet and re-feed the sheet many times.

We recommend not printing on the center strip of labels and keeping them in place. This will allow the printer's pick up mechanism to work properly.

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Zebra

Zebra Setup

Printer Name	Printer Description	Printer Manufacturer	Printer Model
Type of Port	Port	Concurrent Access	ZNET
Baud Rate	Device Attached	Printer Address	Direct Print
Cutter	Optimize DataMatrix	Set Printer Darkness	Print ID Label
Override Label Offset	Print Mode Override	Optional Fonts	

Printer Name

The Printer Name parameter is optional. You may specify a name to uniquely identify this printer. This name will show up in the print request screen and the queue's printer list. It can also be referenced by command files and the ActiveX interface.

Printer Description

The Printer Description parameter is optional. You may enter a description that further identifies the printer for the user. The location of the printer ("Shipping and Receiving") and size/type of media loaded ("4 inch X 6 inch paper media") are examples of what can be stored here.

Printer Manufacturer

Select the Manufacturer of the printer from the list provided.

Printer Model

Select the printer model to be used

Type of Port

Select the type of port the device is attached to. The options are Serial, Parallel, USB, Network/Windows or IP. Some of these options may or may not be available based on the supported capabilities of the printer selected.

Port

Enter the port to which the printer is attached.

Concurrent Access

Select concurrent access if serial ports have separate or sharable interrupts. Sharable interrupts are not supported for Industry Standard Architecture computers. If serial port interrupts are not known, do not select concurrent access. This option appears for those printers that can be configured for serial printing

ZNET Serial Network

Select 'Yes' to enable the use of the Zebra ZNET or Zebra Multi-Drop serial port networking. This allows multiple Zebra printers to be connected to the same serial port. This works only for specific Zebra printer models that are 'chained' together, and requires special cables available from Zebra.

Baud Rate

Indicate the baud rate used. Baud rates may vary on different printers.

NOTE: Always make sure the Baud Rate is the same as your printer setup.

Device Attached

Select the type of device that is attached to the port. The choices are Printer, Western Telematic 4-way Switch, 8-way Switch, or 16-way Switch.

Printer Address

When configuring a printer that is attached to a Western Telematic Switch Box, enter the number on the switch box that the printer is connected to.

Direct Print

Select direct print to send data directly to the port. For a shared or network printer, be sure direct print is not selected. This option appears for those printers that can be configured for parallel printing. This option only appears when using Windows 95, 98, or ME.

Cutter

Select Cutter Installed or Not Installed to designate cutter availability. While designing the format, if a cutter is indicated as being installed on the printer you may choose:

- Do not cut
- Cut after each Format
- Cut after each Batch
- Cut after each Job

Optimize DataMatrix

Select 'Yes' to optimize the DataMatrix 2D symbology. If the printer supports this symbology internally (has correct firmware version), it will print much quicker. Select 'No' to produce DataMatrix as a graphic. This is supported for all printers but prints slower.

Set Printer Darkness

Select 'Yes' to allow software to set printer darkness. This will override any darkness setting defined in the printer. Select 'No' to use printers darkness setting.

Print ID Label

Select Print ID Label to have a printer identification label printed at initialization. Deselect Print ID Label if no printer identification label is needed. If you have specified to have an ID label printed, the software will cause an ID label to be printed at the start up of each session. The ID label shows a number indicating

the number that is assigned to the printer. Selecting to have the ID label printed is useful when more than 1 printer is attached.

Override Label Offset

Select 'Yes' to override printer's setting of label offset. Normally, a label offset of zero means to keep the printer's current setting. Setting this option to 'Yes' will allow the software to always set the printer's label offset. Select 'No' to disable this option.

Print Mode Override

Select print mode override if you want to control the print mode when designing the format. Deselect print mode override if you want to control the print modes from the printers front panel. This option allows you to choose if the print modes should be controlled based on the format or from the printer. For Zebra printers that have no front panel, such as the Stripe 300, Stripe 500, 105s, and 160s, this option will not be displayed.

Optional Fonts

Indicate the number of optional fonts installed on the printer. There may be from 0 to 9 optional fonts available.

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Zebra Cables

9 Pin Cable Configuration	25 Pin Cable Configuration	Western Telematic Switchbox - 41 - Dip Switches
Western Telematic Switchbox - 41a - Dip Switches	Western Telematic Switchbox - 81c - Dip Switches	Western Telematic Switchbox - 161a - Dip Switches
Western Telematic Switchbox - 41, 41a, 161a Cable Configuration	Western Telematic Switchbox - 81c Cable Configuration	Western Telematic Switch Box Printer Assignments

9 Pin Cable Configuration

25 Pin Cable Configuration

Western Telematic Switch Boxes

You have the ability to increase the number of printers you can drive with your PC by using a Western Telematic CAS-41 4-way switch box, a Western Telematic CAS-81 8-way switch box or a Western Telematic CAS-161A 16-way switch box. These switching devices may be obtained from:

WESTERN TELEMATIC, INC.
5 Sterling
Irvine, CA 92718 USA
714.586.9950 • 800.854.7226
Fax: 714.583.9514
www.wti.com

Western Telematic Switchbox - 41 - Dip Switches

NOTE: When using a CAS-41 or 41A, move all four jumpers down one position so that the "DTR" lines printed on the circuit board are not pointing at the jumpers.

Western Telematic Switchbox - 41a - Dip Switches

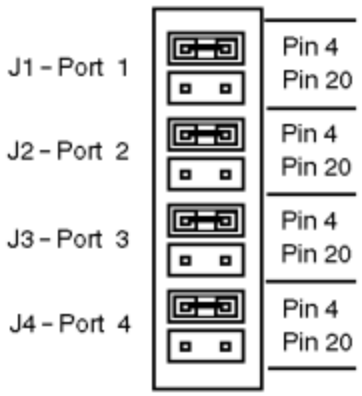
NOTE: When using a CAS-41 or 41A, move all four jumpers down one position so that the "DTR" lines printed on the circuit board are not pointing at the jumpers.

Western Telematic Switchbox - 41a - Changing Monitor Pins

The four internal jumpers located on the CAS-41A circuit board are used to switch the CAS-41A to monitor pin 4 (Request to Send) instead of pin 20 (factory setting). To switch monitor pins, proceed as follows:

CAUTION: Make certain to power off the CAS-41A and disconnect the power cable before attempting to remove the instrument cover.

1. Remove the four screws that secure the CAS-41A's plastic cover to the chassis. Remove the cover from the chassis.



2. Locate the jumpers on the CAS-41A circuit board. As you face the instrument back panel, the jumpers are located in the lower left hand corner of the circuit board. Move the jumpers as shown to monitor pin4.
3. Replace the plastic cover on the CAS-41A chassis. Reinstall the four screws that secure the cover to the chassis. Reconnect the power cable and switch the power on.

Western Telematic Switchbox - 81c - Dip Switches

The CAS - 81C 8-way Switch Box is equipped with a set of 8 position or 10 position Dip Switches as follows:

NOTE: When purchasing the CAS-81c 8-way switchbox, it must be equipped with firmware version 1.0a.

Western Telematic Switchbox - 161a - Dip Switches

Western Telematic Switchbox - 41, 41a, 161a Cable Configuration

Western Telematic Switchbox - 81c Cable Configuration

Western Telematic Switch Box Printer Assignments

If a third CAS-41 Code Activated Switch is connected to the PC above, printer assignments would be 9 through 12. The same would be true for the CAS-161A, where the first switch box would go to Printers 1 through 16, the second switch box would go to Printers 17 through 32 and if a third switch box is connected, it would go to Printers 33 through 48.

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Zebra Notes

Optional Fonts	Backfeed Speed	Print Mode	Communications

Optional Fonts

The Smooth Scalable Font on Zebra printers is supported on the Text Field definition screen. When using the Smooth Font, there is an additional option available under the Center/Justify item prompt. This option will appear when the Source of Data is When Printed or Database. Text can be left or right justified, centered or field optimized. If you choose the option 'Field Optimized', the defined area will be filled with wider characters than you originally defined.

Backfeed Speed

The Backfeed Speed screen item appears on the Format Specification screen and allows a backfeed speed to be set when printing to any Xi Series or PAX Printer.

Print Mode

Tear-Off

Peel-Off

Rewind

Applicator

Cutter

Communications

Communication settings for Zebra printers are as follows:

Data Bits: 8

Stop Bits: 1

Parity: None

Handshake: XON/XOFF

Zebra **P**rogramming **L**anguage: ZPL

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Adding a Printer

Adding a Printer

To Add a New Printer, choose **Settings | Printer Configuration** from the menu bar or select the printer configuration icon from the Function Toolbar. Then click the add printer icon

See Printer Setup for more information.

Deleting a Printer

Deleting a Printer

To delete a printer, choose Settings | Printer Configuration from the menu bar or select the printer configuration icon from the Function Toolbar.

Next select the printer that you wish to delete from the list of Currently Defined printers and click the Delete button.

Changing and Existing Printer

Changing an Existing Printer

To change current printer configuration options, choose **Settings | Printer Configuration** from the menu bar or select the printer configuration icon from the Function Toolbar on the main screen, double-click on the printer that you want to change or highlight it and click the Change Printer Configuration icon or choose Edit | Change from the menu

Print Queue

View/Changing the Print Queue

To View or Change the Print Queue, click the Print Queue button, choose View | Print Queue from the menu bar or press F2.

The Print Queue is a job staging area for your various printing jobs. The Print Job files reside on the hard disk. The software manages these files and loads a new job after each job is completed until it has exhausted the Print Queue. This will allow you to load an entire day's work at the start of a shift.

The Print Queue can hold up to 220 jobs.

Change Single Job Status

Edit Job

The Edit function allows you to modify the attributes you defined for a job when you loaded the job in the Print Queue. Items such as Batch Size, the printer to send the job to, and the Hold Job option are potential selections.

This function only applies to jobs that have not yet begun to print.

Cancel A Job

This function will allow you to cancel any job individually. You would use this function if you no longer needed a job you had previously loaded into the Queue, if one of your printers has broken down, or a format has started to print and you immediately recognize that incorrect information is being printed. This function immediately resets the printer and rewrites any associated report to reflect how many formats, if any, had been printed.

Move Down

This function should be used to prioritize when Non - Printing jobs will be printed.

Select the job that you want to move down in priority. Click the Move Down button until the job is in the desired location in the print queue.

Move Up

This function should be used to prioritize when Non - Printing jobs will be printed.

For example: A truck just pulled up to your shipping dock and the freight is ready but not labeled. The job is in the Queue but it is Job Number 25.

Simply Freeze All of the jobs to that printer, move Job 25 to Job 2, by selecting the job and clicking the Move Up button, then resume all the jobs to that printer.

You can Freeze all jobs except the one that is currently printing.

Freeze

The Freeze function will cause a job that is waiting to print to be suspended. It will be placed in Freeze status immediately. A job in Freeze status will not print until Unfrozen. This will allow you to move the job in the Queue. Only non-printing jobs can be suspended or frozen.

UnFreeze

The Unfreeze function will allow you to change any job that is in a Frozen state into one that is waiting to print. You should use this function after changing to a new label stock, changing the routing of this job to a specific printer, changing the quantity of formats requested or moving the job in the Queue.

Change all jobs associated with Printer

Defined Printers

Provides a list of all the currently defined printers. The Manufacturer , Model, and defined port are listed for each printer.

Printer Status

Click the Printer Status button to receive information back from the printer such as the model number, firmware version and memory available. You may also be able to reset the printer or perform a label feed. These options will vary based on the printer being used.

Cancel All

Allows you the capability to cancel all jobs associated with a designated printer. Select the printer you wish to have all of its jobs cancelled and click the Cancel All button.

Freeze All

Allows you the capability to Freeze all jobs associated with a designated printer. Select the printer for which you wish to freeze the jobs.

UnFreeze All

Allows you the capability to UnFreeze all jobs associated with a designated printer. Select the printer for which you wish to unfreeze the jobs.

Status Window

Job

The number of a specific job. Used to define a specific job when jobs are sent to the Print Queue. The print queue currently supports up to 220 jobs simultaneously.

Format

The assigned Format Name for the format being printed.

Description

A description of the job. If you gave this job a descriptive name when you first placed the job in the print queue, the description will be displayed.

Printer

The printer you defined for printing this job. If you defined more than 1 printer to send this format to, the request will be routed to the first available printer.

Status

The Status of the job being prepared for printing. Possible conditions are:

- *Cannot change active or completed job* - Unable to edit or move a job that is currently printing or completed job.
- *Cannot find job* - Unable to find a specified job.
- *Comm error* - Error on the specified Serial Port.
- *Database error* - An error reading from a database.
- *Excess fonts* - Too many fonts specified.
- *Font load* - Sending fonts to printer.
- *Font load/Busy* - Sending fonts to printer - printer is busy.
- *Frozen* - Job will not start printing until Unfrozen.
- *Graphic load* - Sending a graphic to the printer.
- *Graphic load/busy* - Sending a graphic to printer - printer busy.
- *Invalid device* - Invalid device attached or specified.
- *Paper out* - Printer is out of paper.
- *Picture error* - Error reading picture file.

- *Port unavailable* - The specified port is unavailable.
- *Printer paused* - Pause on the printer.
- *Printing* - Current job or batch is printing.
- *Printing/Busy* - Current job or batch is printing and is unable to accept additional information or is OFF-LINE.
- *Ribbon out* - Printer is out of ribbon.
- *There are no jobs in queue* - No jobs are in the Print Queue.
- *Unable to open* - Unable to open a specified file.
- *Waiting* - Job will print as soon as assigned printer is available.

Total

The total number of identical formats in each batch.

To Do

The total number of formats left to be completed.

Other Messages

- *Cannot Move a Job that is Printing*
- *Cannot Edit a Job that is Printing*
- *Cannot Freeze a Job that is Printing*
- *The Format Request List is Full. Cannot Add this Job Probable Cause: Print Queue is full or 220 jobs in Queue - allow jobs to run and add job later.*
- *Picture Error - Cannot read picture or picture too large. Probable Cause: The specified picture file cannot be found or the size of the picture is too large.*
- *Queue Error - Error loading job in queue. Probable Cause: A .JOB file cannot be found while restoring the Print Queue.*

Advanced Printing

Multi - Port Serial Printing

Multi-Port serial printing is supported for devices such as DigiBoards and RocketPorts.

When configuring a printer, simply indicate which COM port is to be used for "Port".

Network Printing - UNC (Universal Naming Convention)

Setting Up a Printer

To print to a thermal/thermal transfer printer that is not using a Windows driver, you should follow these steps on the computer where the printer is actually attached:

1. From Windows 95/98/NT/2000/XP, click Start | Settings | Printers
2. Double-click on the "Add Printer" icon
3. The "Add Printer Wizard" will be displayed, click "Next" to start the Wizard
4. Choose "Local Printer", click "Next"
5. Choose the port that the printer is connected to, click "Next"
6. From the Manufacturers list on the left side, choose "Generic"
7. From the Printers list on the right side, choose "Generic/Text Only"
8. Click "Next"
9. Type the printer name; for example MyApolloPrinter
10. Choose whether or not you would like this printer to be your default Windows printer, click "Next"
11. Select the "Share Name" option and enter the share name for the printer. This will be the name that will be used to identify the printer on the network.
12. Follow the rest of the "Add Printer Wizard" instructions

Installing the Printer

To install the printer in the software:

1. Choose Settings | Printer Configuration from the main menu bar. Then click the Add a New Printer icon or select Edit | Add from the menu bar.
2. Select the Printer Manufacturer and Printer Model you wish to install.
3. On the General tab choose Network/Windows from the Type of Port drop down box.
4. In the Path text box enter the path to the shared printer, or you can browse your network by selecting the Browse button.
5. Click OK to finish.

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IP Printing

From the Printer Configuration screen choose "IP" from the Type of Port drop down menu. Enter the IP Address of the printer or print server in the IP-Address/Printer Name text box. For example, 192.168.1.2.

IP Communications
Select 'RAW' to use RAW IP communication, 'FTP' to use FTP communication, or 'LPR' to use LPR IP communication. The FTP or LPR printer protocols should be used if the selected server
device does not support RAW mode very well or if the device only supports LPR or FTP printing. When using LPR or FTP consult with your network administrator to determine the Queue Name and the FTP User Name/Password that should be used.

Port Number
When RAW is selected, enter the Raw Data Port Number of the printer. You may select from the list of the most common port numbers, however you may enter one that is not in the list. You should obtain this number from the documentation for the printer or print server that is being used.
You may also click on the "Scan" button to scan the IP address given for available ports. You will then be notified that some Antivirus Software or Firewalls may regard this scanning for available ports as virus activity, click OK to begin the scan.

Anonymous FTP
Select 'YES' to use anonymous FTP login. Select 'NO' to use a user name and password for the FTP login.

FTP User Name
After selecting 'NO' for Anonymous FTP, enter the user name to be used for FTP printing. Your network administrator should be able to provide this information.

FTP Password
After selecting 'NO' for Anonymous FTP and entering the FTP User Name, enter the password for the user selected for FTP printing. Your network administrator should be able to provide this information.

FTP/LPR Queue Name
Enter the printer's queue name for FTP/LPR printing. Your network administrator should be able to provide this information.

Time Out
Enter the number of seconds to wait while attempting to connect to the printer before reporting a connection error.

Note: When opening a printer connected via TCP/IP, the software will attempt three connections before reporting an error.

Printing

Print Batch of Formats

Printing a Batch of Formats

To use the print functions, click the Printer icon or choose **File | Print Batch of Formats** from the menu bar.

Printing a Batch	Printer Number	Duplex Print	Alternate Printer
Output File	Number of Formats	Batch Size	Record Selection
Where	Starting Record	Ending Record	Hold Job
Description			

Printing a Batch

You will be prompted to enter the name of the format to be printed. You may type the name of your format in at this time. An alphabetized directory will be displayed across the screen of the label formats in the default directory. If there are more formats than can be shown, you may use the PgDn key to move to the next screen. Click on a file name with the left mouse button to select a format to print.

If you wish to print out an entire database, refer to the $ALL Function and Tutorial.

You will be prompted for the batch size, number of batches, whether to hold the job at time of printing and an optional job description. All which are explained in the following:

Printer Number

Select the number of the printer to use in order to print the format. You may also choose, Print to File. This will allow you to print the format to a .txt file. You can type in the destination for the output file or choose browse to find a destination.

Duplex Print

Select Yes to simultaneously print the same job on two printers, or No to print the job on a single printer.

This screen item appears when you have two of the same model printer defined.

Alternate Printer

Select No for NONE or the number of an alternate printer to use in order to print the format. This item will only appear if you have configured the same printer on two different ports.

Output File

Enter the name of an output file for the format. Entering the name of an existing file name will append new information to previous information. Entering a new file name will create a new file.

Number of Formats

Enter the number of formats you want printed.

Batch Size

Enter the number of identical copies of each format you want printed.

If the format contains incremented or decremented fields, you will be able to print any number of identical formats before the increment or decrement function is applied. This number is the batch size. You need to enter the batch size and then the number of batches to print.

For example, if you want to print 100 sets of formats with an incremented serial number going from 001 to 100 and for each serial number, you need six identical formats showing the serial number, you will need to enter a batch size of 6 and the number of batches as 100.

Record Selection

Please indicate which records to print. Select All to print ALL records, Range to print a RANGE of records, Marked to print only those records that are MARKED for printing or Conditional to print records with common values.

Entering All will print ALL records in the database. Entering Range will allow you to print a RANGE of records. You will need to specify the starting record number and the ending record number for the range. Entering Marked will allow you to print MARKED records. If you had previously viewed a database and selected individual records for printing, then only the marked records will be printed. Records that are marked for printing will remain marked until the user unmarks them from within the database. Entering Conditional will allow you to print records with common values. You will need to specify a condition in which to print the database records.

Where

This should be a LOGICAL expression using the field names listed, along with constants, arithmetic operators, comparison operators and logical operators. String constants should be enclosed in single quotes. The LIKE comparison operator can be used to perform pattern matching. A % (percent sign) represents ANY STRING of characters and an _ (underscore) represents ANY SINGLE CHARACTER.

Examples: AISLENUM = 100; COLOR = 'BLUE'; SERIALNUM >= 10001 AND SERIALNUM <= 10005; UPCCODE LIKE '12130_____7' AND ITEMNUM <>1000

The database will be searched for all records which match the given criterion, and only those records will be printed.

Starting Record

The number of the record in which to START printing from. Type in **ALL** to print all records in the database.

Ending Record

The number of the record in which to STOP printing.

Hold Job

Select No to let the job begin printing as soon as possible, or Select Yes to hold the job initially.

The hold job prompt will allow you to begin printing the job as soon as possible or to hold the job initially. The default for this prompt is No which will typically be the case. You might be using two different types of stock to print your formats on and want to answer No for all jobs that will use the stock you have loaded in the printer, and Yes for jobs that will require a stock change. Also, you may answer Yes if you wish to stack multiple jobs for printing later.

Description

Enter a job description if desired. This will allow you to type in a short memory aid such as a part number, customer name or format type, so if you need to modify this job once it is in the print queue, you will be able to distinguish it from other jobs.

The following message will now be displayed:

Format Being Added to Format Request Queue

The printer should be turned on and in the ON-LINE/READY mode prior to sending jobs to the printer. (It takes only a few moments to send the necessary commands to the Print Queue but the printer will print until the task is complete.) You may continue to add new formats to the Print Queue, change format data, scan barcodes, view the Print Queue or quit to the previous menu. The formats will continue printing until the task is complete. If you completely leave the program, a dialog box will appear, informing you that the print queue is still active. You have 3 choices:

Yes - Selecting Y will save the Print Queue. Only those jobs not currently printing will be saved. Later when you come back into the software, the Print Queue will be restored.

No - Selecting N will clear all jobs in the Print Queue.

Cancel - Selecting Cancel or pressing ESC will allow you to continue your session.

NOTE: A record indicating the number of formats printed is written to the format tracking data file if necessary.

Once you have selected the format to be printed, the format will be read in and displayed. Next you will be prompted for any variable data to be used to fill all variable fields. The format display will now be updated to show the format as it will look when printed. After entering any variable data, click on the Printer button. The Print Request screen will appear.

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Printing a New Format

To select a new format to print from the print screen, click the **Open** icon or choose **File | Open** from the menu. If you are not already at the print screen, click the **Printer icon** or choose **File | Print a Batch of Formats** from the main menu.

Highlight the name of the format that you wish to print and click **Open.**

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Print Request

Format Name	Description	Printer Number	Hold Job
Output File	Batch Size	Number of Batches	Starting Position
Duplex Print	Duplex Printer	Alternate Print	Alternate Printer

Cut Option			

Format Name
Displays the name that the format was saved as.

Description
Enter a job description if desired. This will allow you to type in a short memory aid such as a part number, customer name or format type, so if you need to modify this job once it is in the print queue, you will be able to distinguish it from other jobs.

Printer Number
Select the number of the printer to use in order to print the format. You may also choose, Print to File. This will allow you to print the format to a .txt file. You can type in the destination for the output file or choose browse to find a destination.

Hold Job

Select No to let the job begin printing as soon as possible, or Select Yes to hold the job initially.

The hold job prompt will allow you to begin printing the job as soon as possible or to hold the job initially. The default for this prompt is No which will typically be the case. You might be using two different types of stock to print your formats on and want to answer No for all jobs that will use the stock you have loaded in the printer, and Yes for jobs that will require a stock change. Also, you may answer Yes if you wish to stack multiple jobs for printing later.

Output File
When you choose to print a format to File you must specify the name of an output file for the format. Entering the name of an existing file name will append new information to previous information. Entering a new file name will create a new file.

Batch Size
Enter the number of identical copies of each format you want printed.

If the format contains incremented or decremented fields, you will be able to print any number of identical formats before the increment or decrement function is applied. This number is the batch size. You need to enter the batch size and then the number of batches to print.

For example, if you want to print 100 sets of formats with an incremented serial number going from 001 to 100 and for each serial number, you need six identical formats showing the serial number, you will need to enter a batch size of 6 and the number of batches as 100.

Number of Batches

Enter the number of times to increment/decrement the format fields.

Starting Position
Indicate where to begin placing the formats on the first page.

Duplex Print
Select Yes to simultaneously print the same job on two printers, or No to print the job on a single printer.

This screen item appears when you have two of the same model printers defined.

Duplex Printer
Select the secondary printer that the job is to be printed to.

Alternate Print
Select the number of an alternate printer to use in order to print the format. This item will only appear if you have configured the same printer on two different ports.

Alternate Printer
Select the secondary printer that the job is to be printed to.

Cut Option
Indicate one of the following:

- Do not cut
- Cut after each format
- Cut after each batch
- Cut after whole job

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Changing Format Data

When Printed/Database Fields Fixed Fields

When Printed/Database Fields

To change the variable data for *When Printed* or *Database Fields*, click the Change Format Variable Data icon or choose **Tools | Change Format Data** from the menu bar. For When Printed Fields, you can also right or left click on an individual field.

The format data input screen will now be displayed. This screen shows the defined custom prompts for each variable field. Below each prompt is an input area for the value of the field.

The highlight bar is moved from one area to the next by pressing the TAB key. If there are more than 6 variable fields, they are grouped in pages, each page containing 6 prompts.

If there are more than 6 prompts, you may use the PgUp and PgDn keys to move from one page to the next or previous page. If you press the TAB key from the last variable field on a page, you will move to the next page. If you press the SHIFT-TAB key from the top variable field on a page, you will move to the previous page, if any.

When all data has been entered, press ENTER. Each variable field and any copied fields will be redisplayed with the current data.

When printing formats that read data from a database, you can view a list of database search keys. To see the list, click the down arrow next to the field input box.

When the list box is displayed, the following message also appears:

The list box shows the database search keys matching the pattern entered with wild card characters being **%** (any string of characters) and _ (any single character).

When entering a search key, you can use any of the following wild card characters to restrict the number of search keys that appear in the list box:

- **%** (percent sign) or * (asterisk) can be used to represent any group of characters in the input data.

- _ (underscore) or ? (question mark) can be used to represent a single character in the input data.

For example, to list all part numbers that begin with the number 56, in the input box, type: 56% or 56* All database records that begin with 56 will be displayed in the list box.

Fixed Fields

To change the format data on fixed fields, right or left click on the individual field. To choose more than one fixed field, hold the CTRL key and click on the fields that you wish to change.

NOTE: You can prevent users from changing fixed fields by not allowing them "Update Format" rights. See Adding, Changing or Deleting Users for more information.

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Test Print

Disabling Test Print	Printer Number
Duplex Print	Alternate Print

To test print the current format choose File | Test Print from the menu bar or select the Test Print icon from the Standard Tool Bar.

Disabling Test Print

You may disable the Test Print option at the print screen only. It will still be available while editing a format. This selection can be found by choosing **Tools | Options** from the menu bar. To disable Test Print see Program Options for more details.

If you are configured for the same printer on two different ports, you can specify which printer should be used prior to Test Printing the format. The Test Print Request Screen will appear with the following items:

Printer Number

Select the number of the printer to use in order to print the format.

Duplex Print

Select to simultaneously print the same job on two printers, or leave blank to print the job on a single printer.

This screen item appears when you have two of the same model printer defined.

Alternate Printer

Select to simultaneously print the same job on two printers, or leave blank to print the job on a single printer.

The printer should be properly cabled to the computer, turned on, and in the ON-LINE/READY mode. The paper or label stock should also be properly positioned.

If an error occurs, see Appendix A: Error Status Messages

NOTE: A record will be written to the format tracking data file indicating that one format was printed.

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Print Format Definition

Print Format Definition

Print Format	Destination	Output to File	Font Setup

Definitions			
Printer Setup	Top Margin	Left Margin	

This report, produced in hard copy form, is a listing of the format specifications, as well as specification data for each field defined on the format.

Print Format Definitions

Open the format that you want to print definitions for and choose **Tools | Print Format Definition** from the menu bar.

Next, you are presented with the printing options for printing format definitions.

Each of the Format Definition Print option items are described in the following section:

Destination

Please select the destination for the report. The selections are:

- Printer to send report to the printer
- Printer Data File create a file which includes printer control characters
- Text File to create a fixed-space ASCII text file.

Output to File

Define the Name/Path of the file to be created when Printer Data File or Text File is selected under Destination.

Font Setup

Select No to use the default printer font. Select Yes for the option to use a different font for this report.

Printer Setup

Select No to use the current default printer options. Select Yes to bring up the "Windows Print Setup" box. This allows the user to select and configure which printer to send the format definition to.

Top Margin

Enter the distance from the top of the paper to the beginning print position in inches or millimeters.

Left Margin

Enter the HORIZONTAL OFFSET of the print image area from the left edge of the paper in inches or millimeters.

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When you define a format, you can record the value of the bar code or text fields in a data file. The report function allows you to output the accumulated data to your ink-jet, laser or dot matrix printer or to a file. For more information on printing the Tracking Report see Printing the Format Tracking Report.

Print Format Definition

Print Format Definitions	Destination	Output to File	Font Setup
Printer Setup	Top Margin	Left Margin	

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Top Margin

Enter the distance from the top of the paper to the beginning print position in inches or millimeters.

Left Margin

Enter the HORIZONTAL OFFSET of the print image area from the left edge of the paper in inches or millimeters.

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Internal dBase Database

Database Functions

The *Database Functions* include: Creating and Defining a New Database; Adding, Changing or Erasing Records From a Database; Erasing a Database Field, Browsing or Searching the Database; Printing, Erasing the Database, Modifying a Database Structure.

Adding a Database

Adding a Database	Add a New Field Sequentially	Insert a New Field
Field Name	Data Type	Field Length
Decimal Places	Field Position	Editing the Database Structure
	Reserved Words	

Adding a Database

To add a new database, click the **New** icon from the menu bar or select **File | New**. A dialog box will appear, click **Save as Type** and choose Database Files (*.dbf). Enter a filename for the database and click **Add.**

Up to 7 index files per database may be specified. This allows for much faster access to the data when printing formats. When you are asked for a search field name, when defining a database field in a format, it should be one of your indexed fields.

When using a database search key, an index file will be created based on your chosen search key, thus making the search time faster. Once the index file is created, it will be saved as part of your database structure.

The structure of the internal database is the same as that used by the program dBASEIII+. This makes it possible to use many of the powerful features of dBASE on your database or to access a database created by dBASEIII+.

You may use databases created under dBASE III, III+, IV or an ASCII database directly, without having to convert them first to ASCII text files. Your dBASE files may be copied into this software's subdirectory if desired. However, this is not necessary because any file may be accessed simply by specifying the path. The available database files will be displayed in alphabetical order for the default directory or subdirectory.

Since the software's database structure is compatible with dBASE III, III+ and IV file structure, databases can handle up to 128 fields per record, over 4000 bytes per record and more than 1 million records per file.

NOTE: When fields are displayed on the screen for purposes of editing or viewing, only those fields that will fit in one window will be shown. Having a print out of the structure of your dBASE fields will serve as a reminder of those fields not seen.

The data from these databases can be included in formats designed with the software. A format field can be specified so that it contains the value from a particular database field in a specified database. For each database that will be used in this way, a particular field must be specified as the search field. When the field's data is to be retrieved, the database is searched to find a record that matches the desired value entered by the operator. A database record can also be designed to contain a serial number value. The purpose of this, for example, is to allow part number specific serial numbers, rather than format specific serial numbers. To declare a field to be a serial number, you can design the structure to have a numeric field with the desired length.

For retrieving a record in the quickest possible time, an internal database should be used. This is an internally indexed file that allows for rapid search.

Also included under the database functions are the functions associated with Serial Files. These files hold the data for a given format field that require unique values for each format printed.

You will be asked to enter a new database name. An alphabetical listing of current database files will also be displayed. Afterwards, you will be presented with the Database Structure Creation screen. From here you need to define the structure of the database.

The following options will allow you to define new fields for the database:

Add a New Field Sequentially - Will add the new fields in sequential order.

Insert a New Field - Will allow you to insert a new field in any order you wish.

For the above options, the database field definition screen will be presented.

Field Name

The name of the field may be up to 10 characters long. The name must begin with a letter but may also contain numbers and the underscore character. Embedded blanks are not permitted. The field name can also be a Reserved Word

Data Type

Valid field types are as follows:

- Character
- Numeric
- Logical
- Memo
- Date

Field Length

This is the maximum number of characters or digits that are to be contained in the field. Date, logical and memo fields are fixed length fields.

Decimal Places

The number of decimal positions in a numeric field. The value entered here should be 2 less than the field length of the numeric field value.

Example: A numeric field length of 5 may have decimal places defined as 3, 2, 1 or 0.

Field Position

The position to insert the field within the structure. This appears after you have defined at least one field for the database.

Editing the Database Structure

In order to edit the database, you must first choose the option Create the New Database. After creating a new database, the Database Records Management screen will be presented.

Reserved Words

There are four (4) reserved words that can be used for database field names: FMTCOUNT, BARSUPP, LBLCOUNT and FMTNAME. More information and an example of their use can be found here.

> **FMTCOUNT** allows you to control the number of labels printed for each individual record when using the $all function. When FMTCOUNT is used as a field name, the record is printed as many times as the number stored in this field. FMTCOUNT is useful when different records in the database

require a different number of labels. For example, when multiple locations are used to shelve an item.

BARSUPP allows you to suppress the printing of all bar codes on a particular label when using the $all function. This would be used to prevent attempted reordering of a discontinued item or attempted ordering of a vendor replenished item. When BARSUPP is used as a field name the absence of a character means print the code. The presence of any character means suppress the code.

LBLCOUNT allows you to change the default batch size for individual database records. When LBLCOUNT is used as a field name, the value stored in this field becomes the default batch size when printing single database records. LBLCOUNT will not work with the $all function, use FMTCOUNT if you are using $all.

FMTNAME is the fourth reserved word. FMTNAME prevents you from printing an incorrect format with a database record. Formats used with FMTNAME should have the same field names on each of the formats and contain only ONE database connection. Connecting to more that one database when using FMTNAME will cause unexpected results. To make use of FMTNAME, follow these steps:

1) Follow the instructions, above, to add a database and to add new fields.

2) Make the **FMTNAME** field as a new field:

The Field Name is **FMTNAME**.

The Data Type is Character.

Enter the field length.

Once all new fields are added, click on Create the New Database.

3) Follow the instructions in Editing a Database, to add records to a database. The fields in the database record MUST be populated.

Enter the data for each field in the database. The data for the **FMTNAME** field is the name of the format in which this database record will be used. For example, if the database contains information about parts, and the format name is PARTLBL, then the data for the **FMTNAME** field should be PARTLBL.

If the **FMTNAME** field is left blank for any record, then that particular record can be printed on any format that makes use of the database.

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Modifying a Database Field

To modify a database field, highlight the field to be modified and then click the **Modify Field** icon or choose **Edit | Modify Field** from the Database Structure Management screen.

The data type, field length or number of decimal places is modifiable. The name of the field cannot be modified. If you need to modify the name of the field, you must first erase the field then add or insert a new field.

NOTE: If there is database information in this field, it will be lost if you erase the field.

Erasing a Database Field

To erase a database field, highlight the field to be erased then click on the **Erase Field** icon or choose **Edit | Erase Field** from the *Database Structure Management screen.*

Indexing a Database

To add an index file, click the **Add Index File** icon or choose **File | Add Index File** from the Database Structure Management screen.

Index File Name

Enter a name for the index file.

Value Indexed

Enter the name of the field to be indexed, or several names joined by the symbol |.

For example: Field1 | Field2 | Field3

Indexes can be created for the purposes of using the database file in a logical order rather than a physical order. Physical order is the order in which records were entered. Logical order is an alphabetical, chronological or numerical order based on a specified field type.

With the exception of logical and memo fields, any field type can be indexed. An index may consist of an expression of 2 fields; however, this expression must consist of only 1 field type.

Because of the software's compatibility with dBASE III, III+ and IV, updating a database file in dBASE is possible. If an index file exists, but is not updated at the same time the database is updated, the first time you access the database in the software, a Dialog Box will appear stating that the index is out of date. At this time, you can choose OK to update the index or Cancel (ESC) to continue without updating the index file. If you choose Cancel, each time you access this database, the Dialog Box will appear.

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Adding an Index File

Adding an Index File

To define an index to be associated with a database, click the **Add Index File** icon from the menu bar from the Database Structure Management screen or choose **File | Add Index File** from the menu bar.

Each database can have up to 7 index files associated with it. Index values may be composed of a single field or an expression involving several fields.

Example: If your database is a customer database and the structure contains customer information fields, such as FIRSTNAME, LASTNAME, ADDRESS and STATE, you may want to organize your data by a certain category. By organizing the data, quicker and more efficient searches can be done. If you want to organize all customer records by their last names, the index value would be the field LASTNAME. If you have several customers with identical last names, you may want to organize the records by last names as well as first names. The index value will be the expression: LASTNAME + FIRSTNAME. All customers with the same last name will be grouped together. Within this grouping, customers are alphabetically arranged by first name.

The following are two requirements for an index file:

Index File Name

A unique name for the index file. The file name can be up to 255 characters as supported under Windows 95b and higher.

Embedded blanks are not permitted.

Value Indexed

The name of the field to be indexed. For the purposes of grouping records into categories.

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Erasing an Index File

To erase an index file, highlight the index file then click the **Erase Index File** icon or choose **File | Erase Index File** from the Database Structure Management screen.

Updating a Database

To update an existing database, click the **Create Database File** icon from the Database Structure Management screen.

You will be prompted to confirm that you want to **Recreate the Database**. If you have made changes that you wish to keep, click **OK**, if not click **Cancel.**

Changing a Database Structure

To change the structure of an existing database, click the **Database Structure Management** icon from the *Database Records Management screen*.

From this screen, you will be able to add, insert, modify or erase fields, or add or delete index files. After making the desired changes, choose **File | Recreate Database File** from the Database Structure Management screen to make permanent changes to the database structure.

Editing a Database

To edit database records, **click the Edit and View Records in Form View or Edit and View Records in Datasheet View** icons or choose **Edit | Edit and View Records in Form View** or **Edit | Edit and View Datasheet** from the menu bar.

If a database file is opened by multiple users simultaneously, the first user to open it will have read/write access. All other users will have read-only access.

Add Records	Change Records	Search	Unmark All
Mark for Erase	Mark for Print	Viewing the Data	

Add Records

The highlight bar will move to the first field of a blank record. Field data will be entered to the right of the field name. The TAB key will move among the fields. If there are more fields than can be displayed at once, the fields will be displayed in sets called pages. When the last field data is entered, press ENTER to add the

record. You can change the data and press ENTER to add additional records. Press ESC to stop adding records. If you did not change any field data, but pressed ENTER again, a Dialog Box will be displayed asking whether the record should be added. Click OK to add the record. This will make a duplicate record in the database. Click Cancel to not add a duplicate record.

While adding several records to the database, the last record entered is left on the screen. Similar field data will not have to be retyped for subsequent records. For example, this allows you the ability to change only a single character in a 10 character part number field without retyping the entire part number.

When entering paragraph information, you can use a text editor. From within the edit box, you can open and edit an existing text file, save the paragraph data as a file, cut text to, copy or paste text from the Windows clipboard, or delete text. Once you have finished modifying the paragraph data, you can return to the previous screen by selecting File then Exit. While typing the data for your paragraph, you can select the edit box by pressing ALT+E or by clicking on the Edit button.

Change Record

This function allows you to update a value in a field. This function applies to the currently displayed record. Once the current record has been modified, you may select Add to add additional records. Please refer to Add Records.

NOTE: To edit a memo field, the procedures for typing text, correcting errors and editing text are the same as those for any standard Windows application.

Search

This function allows you to enter specific values into various fields in order to locate a specific record. The software allows for multiple search keys. You may enter data into a single field or several fields in order to reduce the number of records that satisfy the search criteria. Once you have entered the search data for any field(s), press ENTER. All records matching the search criteria will be presented. When the records are displayed, you may use the up/left arrow keys or the option Search Back to view previous records, if any. To view next records, if any, you may use the down/right arrow or the option Search Next. Click Quit Search or press ESC to leave the search subfunction.

The search function will recognize the wildcard characters ***** and **?** if this box is enabled. If you desire to view all records, for example, in a customer database, in which last names begin with **Mc**, you can use the wildcard *****. The ***** character substitutes for any and all characters. For the above search, type **Mc*** in the LASTNAME field entry prompt. If you desire to view all records in which the last name is only 6 positions in length and the name begins with **Mc**, you can use the

wildcard **?**. The **?** character substitutes for a single character. For the above search, type **Mc????** in the LASTNAME field entry prompt.

Search records can also be modified. Click Change Record to modify the currently displayed record. Press ENTER or click OK when changes are completed. Click Quit or press ESC to leave the currently displayed record unchanged. Click Add Records to add more records to the database. New records are added to the end of the database.

Unmark All

This function unmarks all records that are marked for printing. The records will not be unmarked automatically after the database is printed. Therefore, you must choose to unmark the records after printing. This function applies to the ALL records that are marked for printing.

Mark for Erase

This function marks the viewed record for erase. When the Compress function is chosen, all marked records are erased permanently. Until then, any record can be unmarked. When any record is marked, the phrase MARKED FOR ERASE will be displayed next to the record. This function applies to the currently displayed record. Click once on the check box to place an X in the box. When the box is marked with an X, the Compress function can be chosen to erase all marked records.

Mark for Print

This function marks the viewed record for printing. Click once on the check box to place an X in the box. This function applies to the currently displayed record. To unmark an individual record that was previously marked for printing, click once on the check box to remove the X from the box.

VIEWING THE DATA:

Left arrow-Show previous record.

Right arrow-Show next record.

PgUp-Show previous page if any.

PgDn-Show next page if any.

Home-Show first record.

End-Show last record.

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Form View

A window that displays one entire record at a time. To open a table in Form view go to the Database Records Management screen and select the Form view icon.

Datasheet View

A window that displays data in a row and column format. In Datasheet view you can edit fields, add and delete data, and search for data. To open a table in Datasheet view go to the Database Records Management screen and select the Datasheet view icon.

Printing the Database Records

To print the database records, click on the **Print All Records** icon or choose **File | Print All Records** from the Database Records Management screen.

Printing Records	Destination	Where
Printer Setup	Font Setup	Top Margin
Left Margin	Report Title	Include Fields

Printing Records

If you are printing labels with a thermal/thermal transfer printer, you will need an ink-jet, laser or dot matrix printer to print a database.

Your printer should be turned on, in the ON-LINE/READY mode and loaded with paper. The database fields will be printed within the width of the paper.

After selecting to print all records, you will be presented with the Printing Options specification screen. Once you have entered all items correctly, the information will be sent to the printer or, as an alternative, the database records can also be printed to a file.

Each of the Database Print option items are described in the following section.

Destination

Please select the destination for the report. Select Printer to send the report to the printer, Printer Data File to create a file which includes printer control characters, or Text File to create a fixed-space ASCII text file.

Where

This should be a LOGICAL expression using the field names listed, along with constants, arithmetic operators, comparison operators and logical operators. String constants should be enclosed in single quotes. The LIKE comparison operator can be used to perform pattern matching. A % (percent sign) represents ANY STRING of characters and an _ (underscore) represents ANY SINGLE CHARACTER.

Examples: AISLENUM = 100; COLOR = 'BLUE'; SERIALNUM >= 10001 AND SERIALNUM <= 10005; UPCCODE LIKE '12130_____7' AND ITEMNUM <>1000

Printer Setup

Select No to use the current default printer options. Select Yes to change the printer options for this report. Modified printer settings are specific to the currently selected report.

Font Setup

Select No to use the default printer font, or Yes to select a different font for this report.

Top Margin

Enter the distance from the top of the paper to the beginning print position in hundredths of inches or tenths of millimeters.

Left Margin

Enter the HORIZONTAL OFFSET of the print image area from the left edge of the paper in hundredths of inches or tenths of millimeters.

Report Title

Enter the Report title that should appear on each page. For the default Report title, leave BLANK.

Include Fields

Indicate which fields are to be included in the report by choosing from the list shown. Fields are printed in the sequence that they were chosen.

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Compressing the Database

To compress the database, click on the **Compress and Re-index** icon or choose **File | Compress and Re-index** from the menu bar from the Database Records Management screen.

The Compress function will rewrite the database taking out all records marked for deletion. Also, any index files associated with this database will be completely rewritten to reflect the changes.

NOTE: THIS FUNCTION WILL PERMANENTLY ERASE ALL MARKED RECORDS

Sorting the Database

To sort the database click the **Sort and Re-index Database** icon or choose **File | Sort and Re-index Database** from the Database Records Management screen.

You will be presented with the following items.

Sort Key

An index expression to be used as the sort key. This can be a field name or an expression involving several fields. Available field names will be displayed in the Dialog Box. If an index file has been created for the database, the index value expression will be displayed as well.

Sort Sequence

Indicate which order the database is to be sorted. The sort order can be Ascending or Descending order.

Writing Database Records to a Text File

To write all database information to a text file, click the **Write All Records to Text File** icon or choose **File | Write All Records to Text File** from the Database Records Management screen.

This option converts all records in the current database to standard text records. The resulting file can then be used as input to another program, edited, sent across communication lines, etc.

When selected, you will be prompted to enter the name of the file to be written. Choose the path and filename.

The resulting file will contain *one fixed length line* for each database record. Each line will be terminated by a carriage return - line feed sequence. Within the record, each field will occupy a fixed number of spaces equal to the field length in spaces in the database field. There are no separators between fields.

Appending Records to a Database

To append records from an existing text file, click the **Append Records from Text File** icon or choose **File | Append Records from Text File** from the Database Records Management screen.

This function allows you to add records from a standard text file to the database currently selected, such as records that are resident on a host computer system.

Before appending any records, you must first create a database in the software to accept the data. Make sure that this new database structure is exactly the same as the one you are appending from. It should contain the same number of fields, name of fields, field types and field lengths so that no data is lost.

When selected, you will be instructed to enter the name of the file that contains the records to be read. At the same time, the software displays a list of currently defined .TXT files in alphabetical order. When entering the file name, you may include a drive designator, a path and file extension.

For example: C:\datafile.dat. You may select the desired file. Then click OK or press ENTER when done.

The text file must contain one line for each database record. See Writing Database Records to a Text File. Within the record, each field should occupy a fixed number of columns equal to the field length in the database. There should be no separators between fields. A carriage return - line feed sequence must terminate each record. If a record contains more data than can fit in a database record, then data beyond the columns for the last database field will be ignored. If a record contains less data than required for the database record, then the record beyond will be padded with blanks to fill the remainder of the database record.

Sample text file to be appended to a database:

John Smith	1234 Main Street	Chicago	Illinois
Bill Jones	810 West Blvd.	Detroit	Michigan
Bob Cooper	1112 Euclid Avenue	Cleveland	Ohio

Michael Goldsmith123 North LorainAve.GrandHavenNew York

The last record in the text file above illustrates the point that the append function works on columns with no separators between fields.

Erase ALL Records

To erase ALL records from a database, click on the **Erase All Records** icon or choose **Edit | Erase All Records** from the menu bar on the Database Records Management screen.

You will be prompted to confirm this action. To proceed with erasing ALL records in the database, click OK, or click Cancel.

Databaseview

Databaseview Functions

Databaseview is a database editor that uses Microsoft OLE DB. This new editor natively supports the Microsoft Access® structure allowing you to edit and create Access databases from within the Databaseview software. In addition, with the appropriate drivers you can view and edit almost any database structure including dBase®, Paradox®, and Microsoft FoxPro®. Excel and XML tables can be viewed from within the software however they can not be edited. It is strongly recommended that you lock the software out of any database that you do not want to be modified, by using a password or by making it read-only. This will prevent unauthorized editing by users.

To start Databaseview click on the '**Start the Databaseview**' icon on the Function Toolbar or select **File | Databaseview** from the menu bar.

The *Databaseview functions* include: Creating and Defining a New Access Database; Adding, Changing or Erasing Records From a Database; Browsing or Searching the Database; Printing, and Changing a Database Structure.

Data Sources

Provider	Connection
Advanced	All

Establishing an OLE DB connection will enable you to view and edit almost any database structure. To establish an OLE DB connection click the '**Data Source**' icon on the Standard toolbar or select **File | Connect** from the menu bar. You will then be presented with the Data Link Properties dialog box. Each tab is described below.

Provider

Use the Provider tab to select the appropriate OLE DB provider for the type of data you want to access. Not all applications allow you to specify a provider or modify the current selection; this tab is displayed only if your application allows the OLE DB provider selection to be edited.

Connection

Use the Connection tab to specify how to connect to your data using an OLE DB provider.
The Connection tab of the Data Link Properties dialog box is provider-specific and displays only the connection properties required by the selected OLE DB provider. Connection properties allow you to specify where your data is located and how to connect to the data.

NOTE: When using the Jet database provider with a single user password protected database do NOT set the password on the Connection Tab. This needs to be set on the ALL tab.

Advanced

Use the Advanced tab to view and set other initialization properties for your data. The Advanced tab of the Data Link Properties dialog box is provider-specific and displays only the initialization properties required by the selected OLE DB provider.

ALL

Use the All tab to view and edit all OLE DB initialization properties available for your OLE DB provider. Properties can vary depending on the OLE DB provider you are using.

NOTE: To set the password for a single user protected MDB database, you need to enter the password into the **"Jet OLEDB:Database Password"** Property on the ALL tab. Do NOT set any password on the Connection Tab.

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Cross Reference Wizard

Destination Field	Data Source	Table Name	Search Field
Data Field	Records	Available Records	Select Records
	Clauses	Example	

Sometimes it is necessary to not only pull in data from one database but from a second, third or more databases. It is possible in the software to create a Database Cross Reference and then use it to accomplish this. The Database Cross Reference acts as a pointer that directs the software to the database where the data is stored.
To use this function, you must create a Database Cross Reference following certain rules. A Database Cross Reference is a special text string that can reside in any database system. The Database Cross Reference's can also be nested meaning that one Database Cross Reference can point to another Database Cross Reference and so on until finally the data field is located.
Click the '**Database Cross Reference**' icon on the Standard toolbar or select **Edit | Cross Reference** from the menu bar to use the software's wizard to create your Database Cross Reference text string. A description of each option available in the wizard follows:

Destination Field

The field in the database table that will contain the Database Cross Reference text string.

Data Source
The database that contains the data to be accessed.

Variable Table
This option is to be used when creating hazardous chemical labels with multi-lingual text. With it enabled, you will be able to choose a table with a specific language from within Easylabel.
Note: This option has to be enabled in the Cross Reference Wizard and the corresponding database field on the label format.

Table Name
The table that contains the data to be accessed.

Search Field
The search field is the field within the table that contains data your search will be performed on.

Data Field
The field that contains the data you want to reference in your Cross Reference.

Records
A listing of all the records selected in the Cross Reference.

Available Records
A snapshot of the database table which only includes the Search Field and the Data Field.

Select Records
A listing of all the records selected in the Cross Reference.
You can also create your own Database Cross Reference by following the rules below.
The Database Cross Reference string must start with the '>' character and it contains the name of the data source (file or system DSN), the name of the table, the name of the key field, the name of the data field, which record(s) to use as data, and a divider to separate multiple records. The software sees the text following the '>' as a command and will only print the command as text if an error has occurred.

Clauses
NAME (short code N)
The NAME clause is of the form:
NAME=datasourcename or N=datasourcename

Where datasourcename specifies which existing data source stores the information about how to connect to the desired database. Either a file DSN or system DSN can be used.

TABLE (short code T)
The TABLE clause is of the form:
TABLE=tablename or T=tablename
Where tablename specifies the name of the table to retrieve data from. If you wish to use the Variable Table option, enter "??" for the table name.

KEYFIELD (short code K)
The KEYFIELD clause is of the form:
KEYFIELD=fieldname or K=fieldname
Where fieldname specifies the name of the field to be used as a search key.

DATAFIELD (short code D)
The DATAFIELD clause is of the form:
DATAFIELD=fieldname or D=fieldname
Where fieldname specifies the name of the field to be used as printed data.

RECORD (short code R)
The RECORD clause is of the form:
RECORD=string1,string2,string… or R=string1,string2,string….
RECORD specifies the record(s) searched for within the key field.

DIVIDE (short code V)
The DIVIDE clause is of the form:
DIVIDE=”string” or V=”string”
Or DIVIDE=2 or V=2
Where “string” is a text character string that will separate each record. If DIVIDE is set equal to a number the software will insert that many blank lines after each record. If no value for DIVIDE is specified, a carriage return will be added to start the next record on a new line.
The entire string must be enclosed in braces {} and clauses must be separated by semi colons (;).

Example
>{N=RISKSAFETY;T=GERMAN;KEY=ID;DATA=PHRASE;R=R2,S17}
For this example the data source name is RISKSAFETY. We are looking in the GERMAN table under the ID column for R2 and S17. We will then pull out the data stored in the PHRASE column for those two records. Since we did not specify a DIVIDER, one carriage return will be added after each record.

Quotes (“”) should be placed around the data source, table, key field, data field, or record names if they contain any characters other than alphabetic or numeric characters.

For Example:
>{N=”RISK&SAFETY”;T=GERMAN;KEY=ID;DATA=PHRASE;R=R2,S17}
The cross reference above is valid because RISK&SAFETY is enclosed in quotes (“”).

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Adding an Access Database

Adding a Database	Table Name	Name
Type	Length	Constraint
Insert to Table	Remove	Move Up
Move Down		

Adding a Database

To add a new database, click the **'New'** icon which is located on the Standard toolbar or select **File | New** from the menu bar. A dialog box will appear, click **Save as Type** and verify that Access Database (*.mdb) is selected. Enter a filename for the database and click **Save.**

The structure of the database is the same as that used by the program Microsoft Access®. This makes it possible to use many of the powerful features of Access on your database or to access a database created by Microsoft Access.

NOTE: When fields are displayed on the screen for purposes of editing or viewing, only those fields that will fit in one window will be shown. Having a print out of the structure of your Access fields will serve as a reminder of those fields not seen.

The data from these databases can be included in formats designed with the software. A format field can be specified so that it contains the value from a particular database field in a specified database. For each database that will be used in this way, a particular field must be specified as the search field. When the field's data is to be retrieved, the database is searched to find a record that matches the desired value entered by the operator.
The following options will allow you to define new fields for the database:

Table Name

Enter a name that will uniquely identify the contents of the table.

The following selections are available in the Column Definition portion of the Create a New Table dialog box. In this section you will be prompted to define the structure of your database.

Name

The name of the field may be up to 10 characters long. The name must begin with a letter but may also contain numbers and the underscore character. Embedded blanks are not permitted.

Type
The data type definitions below are specific to a Microsoft Access Database. Different database formats will treat some data types in different ways.
Valid field types are as follows:

- Binary

  Fixed-length binary data with a maximum length of 8,000 bytes.

- Bit

  Integer data with either a 1 or 0 value

- Byte

  A unit of storage capable of holding a single character.

- Char

  Fixed-length non-Unicode character data with length of n bytes. n must be a value from 1 through 8,000. Storage size is n bytes.

- Counter
- Currency

  Monetary data values from -2^63 (-922,337,203,685,477.5808) through

  2^63 - 1 (+922,337,203,685,477.5807), with accuracy to a ten-thousandth of a monetary unit. Storage size is 8 bytes.

- DateTime

  Date and time data from January 1, 1753, through December 31, 9999, with an accuracy of three-hundredths of a second, or 3.33 milliseconds

- Double

  Stores numbers from

  -1.79769313486231E308 to

  -4.94065645841247E-324 for negative values and from 1.79769313486231E308 to 4.94065645841247E-324 for positive values.

- Guid

  Globally Unique Identifier (GUID)

  A 16-byte field used in a Microsoft Access database to establish a unique identifier for replication.

  Note: In an Access database, GUIDs are referred to as Replication IDs.

- Integer

  Integer (whole number) data from -2^31 (-2,147,483,648) through 2^31 - 1 (2,147,483,647). Storage size is 4 bytes.

- Long Binary

  (Default) Stores numbers from -2,147,483,648 to 2,147,483,647 (no fractions).

- Long Char
- Real
- SmallInt

  Integer data from -2^15 (-32,768) through 2^15 - 1 (32,767). Storage size is 2 bytes.

- VarBinar

  Variable-length binary data with a maximum length of 8,000 bytes.

- VarChar

  Variable-length non-Unicode character data with length of n bytes. n must be a value from 1 through 8,000. Storage size is the actual length in bytes of the data entered, not n bytes. The data entered can be 0 characters in length.

Length
When defining a variable field the maximum length of the field must be entered.

Constraint
This option determines whether a value is required to be entered for a specific field. Selecting May Null specifies that the field does not need to have data entered. Selecting Not Null specifies that the field must have data entered.
The Table Definition portion of the Create a New Table dialog box is used to insert defined fields into your table and to modify the placement of those fields.

Insert to Table
After a field has been defined, in the Column Definition section, selecting this button will insert it sequentially into your database structure.

Remove
Will remove an inserted field from your database structure.

Move Up
Will move an inserted field up the database structure.

Move Down
Will move an inserted field down the database structure.

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Opening a Table

The Databaseview editor internally supports the following four database file formats: Access (*.mdb), dBase (*.dbf), Excel (*.xls), and Extensible Markup Language (*.xml). It is important to note that .xls and .xml files will be in a read-only format. If you require the ability to view and edit other database formats in the editor an OLE DB connection will have to be established.

To open one of the supported database file formats click the '**Open**' icon on the standard toolbar or select **File | Open** from the menu bar. You will then be presented with the Select Database File dialog box at which point you should browse to the directory where your database files are stored. The supported database files will appear in alphabetical order. Select the database file you wish to open and click the Open button.

A Tables dialog box will appear. This dialog box contains a list of all the defined tables for the chosen database. Select the table you wish to open and click OK. The table will now be displayed by default in Datasheet View.

If you wish to select a different table from the active database click the '**Select a Table**' icon on the Edit toolbar or select **File | Tables** from the menu bar. You will then be presented with the tables dialog box that lists all of the available tables for that database. Select the table you wish to view and click OK.

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Create a New Table

Table Name	Name	Type
Length	Constraint	Insert To Table
Remove	Move Up	Move Down

To create a new table for an existing Database click the **'Create a New Table'** icon , which is located on the Standard toolbar or select **File | New Table** from the menu bar.
You will then be presented with the Create a New Table dialog box. From here you need to define the structure of the database table.
The following options will allow you to define new fields for the Table:

Table Name
Enter a name that will uniquely identify the contents of the table.
The following selections are available in the Column Definition portion of the Create a New Table dialog box. In this section you will be prompted to define the structure of your database.

Name
The name of the field may be up to 10 characters long. The name must begin with a letter but may also contain numbers and the underscore character. Embedded blanks are not permitted.

Type
Valid field types are as follows:

- Binary

  Fixed-length binary data with a maximum length of 8,000 bytes.

- Bit

  Integer data with either a 1 or 0 value

- Byte

  A unit of storage capable of holding a single character.

- Char

  Fixed-length non-Unicode character data with length of n bytes. n must be a value from 1 through 8,000.

- Counter
- Currency

  Monetary data values from -2^63 (-922,337,203,685,477.5808) through

2^63 - 1 (+922,337,203,685,477.5807), with accuracy to a ten-thousandth of a monetary unit. Storage size is 8 bytes.

- DateTime

  Date and time data from January 1, 1753, through December 31, 9999, with an accuracy of three-hundredths of a second, or 3.33 milliseconds

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  Stores numbers from

  -1.79769313486231E308 to

  -4.94065645841247E-324 for negative values and from 1.79769313486231E308 to 4.94065645841247E-324 for positive values.

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  Integer (whole number) data from -2^31 (-2,147,483,648) through 2^31 - 1 (2,147,483,647). Storage size is 4 bytes.

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- Long Char
- Real
- SmallInt

  Integer data from -2^15 (-32,768) through 2^15 - 1 (32,767). Storage size is 2 bytes.

- VarBinar

  Variable-length binary data with a maximum length of 8,000 bytes.

- VarChar

  Variable-length non-Unicode character data with length of n bytes. n must be a value from 1 through 8,000.

Length
When defining a variable field the maximum length of the field must be entered.

Constraint
This option determines whether a value is required to be entered for a specific field. Selecting May Null specifies that the field does not need to have data entered. Selecting No Null specifies that the field must have data entered.

The Table Definition portion of the Create a New Table dialog box is used to insert defined fields into your table and to modify the placement of those fields.

Insert to Table
After a field has been defined, in the Column Definition section, selecting this button will insert it sequentially into your database structure.

Remove
Will remove an inserted field from your database structure.

Move Up
Will move an inserted field up the database structure.

Move Down
Will move an inserted field down the database structure.

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Modifying a Field

To modify a field the table must be open and be in Design View. To enter Design View you can click the '**Design View**' icon on the Edit toolbar or select **View | Design View** from the menu bar.

The Type and Column Size is modifiable. The name of the field cannot be modified. If you need to modify the name of the field, you must first delete the field then add a new field.

NOTE: If there is database information in a field and you erase it all information that was it this field will be lost.

Deleting a Field

To erase a field (column), highlight the field to be erased then click on the '**Delete a Column**' icon on the Standard toolbar or choose **Edit | Delete Column** from the menu bar.

Adding a Field

To add a new field (column) to an existing table click the '**Add a new Column**' icon from the Standard toolbar or select **Edit | Add Column** from the menu bar.

You will then be presented with the Create a New Column dialog box. From this dialog box you can give your field a unique name and select which data type the field will be.

Adding a Record

To add a new record click the '**Add New**' icon from the Standard toolbar or select **Edit | Add New Record** from the Menu bar. Enter the appropriate data in the fields and press the tab key on the keyboard to navigate through the data cells. A new record will automatically be added when the tab key is selected in the last field of that record.

Deleting a Record

To delete a record in a table first select any data cell in that record then click the '**Delete**' icon from the Standard toolbar or select **Edit | Delete Record** from the Menu bar. The software will verify with you that it is ok to delete the record, if it is click '**OK**'.

Changing Fonts

Databaseview allows you to specify the Font, Font Style, and Font Size that the records in your table will be displayed in. The changes will effect the entire table, it is not possible to change the Font attributes for a specific record.

To specify a Font, Font Style, or Font size select any record in the database table. To change the font that the records are displayed in select the appropriate font from the font drop down text box.

To make the text bold, click Bold.

To make the text italics, click Italics.

To underline the text, click underline.

Navigating a Database Table

You have the ability to move through records in a table in both Form View and Datasheet View. The navigation buttons are located on the Navigate toolbar . You can use these buttons to quickly move between records in a table.

The same functions can also be accessed by selecting **Edit | GoTo** from the menu bar.

Editing Table Records

To edit database records, click the 'Form View' icon or the 'Datasheet View' icon on the Edit menu. You can also select View | Form View or View | Datasheet View from the menu bar.

If a database file is opened by multiple users simultaneously, the first user to open it will have read/write access. All other users will have read-only access.

Add Records	Edit Records	Deleting Records	Search

Add Records

To add a new record to the active table click the **'Add New'** icon from the Standard or Navigate toolbar.
The highlight bar will move to the blank record. Field data can then be entered into each field of the record. The TAB key will move among the fields. If there are more fields than can be displayed at once, the fields will be displayed in sets called pages.

Edit Records

To edit a field within a record select the field by clicking on the field with the mouse or by using the arrow keys on your keyboard. That field is now the active field and is available to have data added, or edited.

Deleting Records

You can delete a single record or a group of records by selecting the record or records and clicking the **'Delete'** icon, which is located on the Standard toolbar.

Search

This function allows you to enter specific values into various fields in order to locate a specific record. The software allows for multiple search keys. You may enter data into a single field or several fields in order to reduce the number of records that satisfy the search criteria. Once you have entered the search data for any field(s), press ENTER. All records matching the search criteria will be presented. When the records are displayed, you may use the up/left arrow keys or the option Search Back to view previous records, if any. To view next records, if any, you may use the down/right arrow or the option Search Next. Click Quit Search or press ESC to leave the search subfunction.

The search function will recognize the wildcard characters ***** and **?** if this box is enabled. If you desire to view all records, for example, in a customer database, in which last names begin with **Mc**, you can use the wildcard *****. The ***** character substitutes for any and all characters. For the above search, type **Mc*** in the LASTNAME field entry prompt. If you desire to view all records in which the last name is only 6 positions in length and the name begins with **Mc**, you can use the wildcard **?**. The **?** character substitutes for a single character. For the above search, type **Mc????** in the LASTNAME field entry prompt.

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Design View

Design View is used to make modifications to a table's structure. To open a table in Design View select **View | Design View** from the menu bar or click the '**Design View**' icon on the Edit Toolbar.

After you've created a table in Design view, you can view it in Form View or Datasheet View.

Form View

A window that displays one entire record at a time. To open a table in Form view select **View | Form View** from the menu bar or click the '**Form View** ' icon on the Edit Toolbar.

Datasheet View

A window that displays data in a row and column format. In Datasheet view you can edit fields, add and delete data, and search for data. To open a table in Datasheet view select **View | Datasheet View** from the menu bar or click the '**Datasheet view**' icon on the Edit toolbar.

Printing the Entire Table of Records

To print the entire Table of records, click on the '**Print All Records**' icon on the Standard toolbar or choose **File | Print All Records** from the menu bar.

Printing Records	Name	Print to File
Number of Copies	Collate	Properties

Printing Records

If you are printing labels with a thermal/thermal transfer printer, you will need an ink-jet, laser or dot matrix printer to print a database.
Your printer should be turned on, in the ON-LINE/READY mode and loaded with paper. The database fields will be printed within the width of the paper.
After selecting to print all records, you will be presented with the Print dialog box. After the appropriate settings have been entered, the information will be sent to the printer or, as an alternative, the database records can also be printed to a file. Each of the Database Print options are described in the following section.

Name

From the drop down box select the printer to print the database records.

Print to File

Prints the document to a file instead of routing it directly to a printer. The document is saved with the printer formatting, such as font selection and color specifications, in a .PRN file.

Number of Copies

Specify the number of copies you want to print.

Collate

If you have selected more than one copy, specifies whether you want the copies to be collated. Collated copies are in numerical order.

Properties

Click to set up options for the printer. The options available depend on the printer's features.

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Sorting the Table

You have the ability to sort records in ascending or descending order when your table is displayed in Datasheet view.

To sort records in Datasheet view click the field you want to act as your sort key and click either the '**Sort Ascending**' icon or the '**Sort Descending**' icon on the Standard toolbar. The entire table will then be sorted based on your selection.

You may also select **Edit | Sort | Sort Ascending** or **Edit | Sort | Sort Descending** from the menu bar to sort the table.

Writing Database Records to a Text File

To write all database information to a text file, select **File | Write All Records to Text File** from the menu bar.

This option converts all records in the current database to standard text records. The resulting file can then be used as input to another program, edited, sent across communication lines, etc.

When selected, you will be prompted to enter the name of the file to be written. Choose the path and filename.

The resulting file will contain *one fixed length line* for each database record. Each line will be terminated by a carriage return - line feed sequence. Within the record, each field will occupy a fixed number of columns equal to the field length in columns in the database field. There are no separators between fields.

Appending Records to a Table

To append records from an existing text file, select **File | Append Records from Text File** from the menu bar.

This function allows you to add records from a standard text file to the database currently selected, such as records that are resident on a host computer system.

Before appending any records, you must first create a database in the software to accept the data. Make sure that this new database structure is exactly the same as the one you are appending from. It should contain the same number of fields, name of fields, field types and field lengths so that no data is lost.

When selected, you will be instructed to enter the name of the file that contains the records to be read. At the same time, the software displays a list of currently defined .TXT files in alphabetical order. When entering the file name, you may include a drive designator, a path and file extension.

For example: C:\datafile.dat. You may select the desired file. Then click OK or press ENTER when done.

The text file must contain one line for each database record. See Writing Database Records to a Text File. Within the record, each field should occupy a fixed number of columns equal to the field length in the database. There should be no separators between fields. A carriage return - line feed sequence must terminate each record. If a record contains more data than can fit in a database record, then data beyond the columns for the last database field will be ignored. If a record contains less data than required for the database record, then the record beyond will be padded with blanks to fill the remainder of the database record.

Sample text file to be appended to a database:

John Smith	1234 Main Street	Chicago	Illinois
Bill Jones	810 West Blvd.	Detroit	Michigan
Bob Cooper	1112 Euclid Avenue	Cleveland	Ohio

Michael Goldsmith123 North LorainAve.GrandHavenNew York

The last record in the text file above illustrates the point that the append function works on columns with no separators between fields.

If your database table has a primary key defined any records being appended with the same primary key will overwrite the existing records in that database.

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Refresh Record

The Refresh Record works like a multi-step undo function. Clicking the '**Refresh Record**' button on the Standard toolbar or selecting **View | Refresh** from the menu bar will undo all of the changes that were made to the record that is currently being edited. Once the data has been saved, Refresh Record will no longer have an effect.

Tool Bars

There are three tool bars available within the software that make accessing many of the functions a one step process. These three tool bars are outlined below.

Standard Tool Bar
The Standard Tool Bar provides the following functions:

- New
- Open
- Create a New Table
- Data Source
- Save
- Print
- Cut

- Copy
- Paste
- Cross Reference Wizard
- Path Browser
- Undo
- Sort Ascending
- Sort Descending
- Find
- Add New
- Delete
- Refresh Record
- Add a Column to Table
- Delete a Column from Table

Edit Tool Bar

The Edit Tool Bar provides the following functions:

- Select a Table
- Design View
- Form View
- Datasheet View
- Font
- Font Size
- Bold
- Italics
- Underline

Navigate Tool Bar

See Navigating a Database Table

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Window

The software gives you the ability to view multiple tables, from different databases, at the same time.

If you have multiple tables open within the software you are able to view those tables in different ways. By selecting Window from the menu bar you will be presented with the following options:

Tile

Displays all of the open tables in separate window panes.

Cascade

Displays all of the open tables overlapping one another with only the title bars visible.

New Window

Displays a duplicate window of the active table. This is useful when you are editing to very large tables.

Serial Files

Serial File Functions

The Serial File is used to supply data to a format field. This feature is generally used in conjunction with the increment or decrement function. After printing a set of formats using incremented or decremented fields, the serial file is updated to contain the next logical value in the sequence. This will prevent recurring or missing serial numbers. A serial number can also be embedded in a database record.

A serial file may contain up to 20 characters. As with an incremented or decremented field, only the trailing ten numeric characters will be changed.

The serial file will have a file with extension of .SER.

Creating a Serial File

To add a new serial file, click on the New icon from the tool bar or choose **File | New | Serial File** from the menu bar. When the dialog box appears, click on Save as Type, choose Serial Files (*.ser) and enter a filename, click OK.

You will be presented with the Create Serial Number File Screen. From here you need to specify the serial number.

Enter the starting value of the serial number. The value can be from 1 to 20 characters in length.

Recent Serial Files

Choose **File | Recent Serial Files** from the menu bar to display a list of recently created/edited Serial Files, which can then be opened.

Viewing/Changing a Serial File

To view or change an existing serial file, click the Open icon or select **File | Open** from the menu bar then select Serial File (*.ser) from the list of file types. Finally, select the existing .ser file and click Open.

Erasing a Serial File

To erase a serial file, choose **File | Erase** from the menu. Locate the directory of the file, click on Files of Type and choose *Serial Files (*.ser).* The available serial files are listed. Choose the correct one and click Erase.

You will be prompted to confirm that you want to erase the serial file. Click **OK** to erase the file or **Cancel** to not erase it.

Reports

Creating a Report

The values for a text or barcode field can be recorded to a Format Tracking Report by choosing the Report Data function from the field parameters dialog box.

The data in this field will be stored each time the format is printed, thereby creating a report (.rpt) file. If no fields are specified with this option, no Format Tracking Report will be created.

Recent Reports

Choose **File | Recent Reports** from the menu bar to display a list of recently created/edited reports, which can then be opened.

Printing the Format Tracking Report

To print a tracking report, click the Open icon or choose **File | Open** from the menu. Then click *Report File (*.rpt)*. Locate the report, select it and click Open. Once the report is open, click on the Printer icon or choose **File | Print** from the menu.

Printing the Report	Destination	Printer Setup	Font Setup
Top Margin	Left Margin	Print All	Combine Reports
Sort Key	Report Title	Daily Subtotals	Field Heading
Field Width	Include Fields		

Printing the Report
When you define a format, you can record the value of the bar code or text fields in a data file. The report function allows you to output the accumulated data to your ink-jet, laser or dot matrix printer or to a file.

The available functions are: Print the Report, Test Print the Report, Change Report Parameters, Write all records to a Text file, Erase Format Tracking Data, and Erase ALL Tracking Data. A sample report listing will be displayed.

The printer should be on and in the ON-LINE/READY mode prior to selecting a report to print. You may use the test print function to assure that the paper is properly loaded.

After selecting to print the report, you will be presented with the tracking report specification screen.

Destination
Please select the destination for the report. The selections are:

- Printer, to send report to the printer
- Printer Data File, create a file which includes printer control characters
- Text File, to create a fixed-space ASCII text file.

Printer Setup
Select No to use the current default printer options. Select Yes to change the printer options for this report. Modified printer settings are specific to the currently selected report. This allows user to select which printer to print the database records or reports to, and allows for the printer setup to be changed if necessary.

Font Setup
Select the Font Setup button to choose the font you wish the report to be printed in.

Top Margin
Enter the distance from the top of the paper to the beginning print position in inches or millimeters.

Left Margin
Enter the HORIZONTAL OFFSET of the print image area from the left edge of the paper in inches or millimeters.

Print All
Select to print ALL reports in the directory. Selecting to print ALL reports in a subdirectory will print ALL field data from each report.

Deselect to print the tracking report for the currently selected format.

Combine Reports
Deselect to print a separate report based on individual formats. Select to combine all tracking data from all reports into a single report.

Sort Key
Please select one or more fields, from the Available Fields list box, to be used to sort the report records.

Report Title

Enter the Report title that should appear on each page. For the default Report title, leave BLANK.

Daily Subtotals
Select to print a daily subtotal based on the date the label was printed. Deselect if daily subtotals are not needed.

Field Heading
If desired, the column heading for a field may be changed by entering a different name.

This item appears for each field that is included in the report.

Field Width
If you wish to truncate a field, enter the maximum column width for the field. Enter ZERO to use the default width of the field.

This item appears for each field that is included in the report.

Include Fields
Indicate which fields are to be included in the report by choosing from the list shown. Fields are printed in the sequence that they were chosen.

NOTE: The software will print as many of the included fields as possible within the width of the paper.

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Test Printing the Format Tracking Report

To test print only the format tracking Header, choose the Test Print icon or choose **File | Test Print**. Use this command to properly align your forms.

This function causes the printer to print the report header and then skip to the next new page. This allows you to properly position the paper with respect to the top of form when using a dot matrix printer.

Changing the Report Parameters

To change the report parameters, choose **Edit | Change Parameters** from the Print Report screen menu bar.

This function allows you to preview the items included in the report prior to printing. After choosing the Change Parameters option, you are presented with the tracking report specification dialog box. From here you can change any of the report parameters.

To print your report with the new changes, you must choose **File | Print** from the menu bar.

Writing the Report to a Text File

To write all format tracking data to a text file, choose **File | Write to Text File** from the menu while viewing the report.

This option converts all records in the current format tracking file to standard text records. The resulting file can then be used as input to another program, edited, sent across communication lines, etc.

You will be presented with the report file extract specification screen.

Once you have entered all items correctly, a Dialog Box appears stating the number of records written to the file. The resulting file will contain one fixed length line for each record of tracking data. Each line will be terminated by a carriage return - line feed sequence. Within the record, each field will occupy a fixed number of columns equal to the field length. There will be no separators between fields.

Sample report file after being written to a text file:

06-20-93 2:25 SAMPLE 20 data123 12345xyz

06-22-93 4:01 SAMPLE 18 test1111ABCDEFEE

After the report is written, you will be returned to the Print Report display screen.

Each of the report file extract data items are described below.

Output File

Enter the name of the text file you want to create. The name entered can include a drive designator and path.

For example: C:\textfile.dat. The file will be written to the root of C:

Include Fields

Indicates which fields are to be included in the report by choosing from the list shown. Fields are printed in the sequence that they were chosen.

Erasing Format Tracking Data

To erase format tracking data from a specific report, choose File | Erase Format Tracking Data while the report is opened in the Print Report screen.

This function erases all data records in the format tracking data file for the selected format. You should be sure that the data has been printed before using this function. Once erased, the data cannot be recovered.

A Dialog Box message will be displayed asking you to confirm that you do want the data erased. Click OK or press ENTER to confirm. Click Cancel or press ESC to return to the Print Report screen.

Erasing ALL Tracking Data

To erase format tracking data for all reports in a specific directory, choose **File | Erase All Tracking Data** from the Print Report screen.

This function erases ALL data records for the tracking reports in a specific directory. You should be sure that the data has been printed before using this function. Once erased, the data cannot be recovered.

A Dialog Box will display a message asking you to confirm that you want to erase ALL data for ALL reports. Click OK or press ENTER to confirm. Click Cancel or press ESC to return to the Print Report screen.

What is Active X?	ELabelPrinter	ELabelBatch
ELabelJob	ELabelInfo	Documentation and Examples

ActiveX

The software contains a set of ActiveX controls that can be easily embedded into Visual Basic applications or any other environment that supports ActiveX controls (such as Visual C++, Microsoft Access, etc.).

The software's ActiveX controls allow middleware programmers to create programs that can use the internal functions of the software to print labels, view job status, preview the label prior to printing and many other features that in the past were only available from inside the software.

There are four controls available:

ELabelPrinter

The ELabelPrinter control allows for finding out which printers are installed, reading printer properties (name, model, etc.) and for performing certain operations on the printers.

ELabelBatch

The ELabelBatch control allows for composing a print job and submitting it to the print queue. The programmer can simply supply a format name, fill in the fields, and number of batches and/or batch size to define a job. Once defined, the job can be created.

Note that there is absolutely no connection between different instances of an ELabelBatch control: Client1 can set the Format Name property to "nut" and Client2 can simultaneously set the Format Name of his ELabelBatch instance to "screw". If 2 clients call the Create Job method simultaneously, then 2 jobs will be added to printer queue in an unpredictable order.

ELabelJob

The ELabelJob control allows for examining and modifying jobs that are in the print queue. Jobs that are currently being printed can be queried for current print status, or the job can be cancelled. Jobs that are not being printed can be modified to change label counts or the destination printer for example.

ELabelInfo

The ELabelInfo control allows for read-only access to many of the properties of a label format. In addition, some of the field properties can be accessed. None of the properties of the label or its fields can be modified by this control.

Documentation and Examples

For descriptions of the methods and properties available, see the documentation file ELabelOCX.doc that is installed in the software's directory.

For more information about the ActiveX documentation and sample programs please visit our website.

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Application Programming Interface (API)

What is API?	LabelCommand()	LabelJobQuery()
LabelJobCancel()	DDE_PrinterStatus	Time Test: API vs. Command File Monitoring
API Examples		

The Application Programming Interface is included with the software for legacy purposes. If you are doing any type of middleware programming, it is strongly recommended that our ActiveX controls be used.

Application Programming Interface (API)

The software's Application Programming Interface (API) was called DDE in earlier documentation. API is a non-interactive printing method in which another application can use Command File functions to directly communicate with the software to: initiate label printing, cancel print jobs, query job status, or retrieve printer status. An application communicating using API functions sends the first label to the printer more quickly than if running the software with Command File Monitoring enabled.

The software's API supports the following functions:

LabelCommand()

The LabelCommand() function allows the commands to be entered exactly in the same format as for a batch command file. The single operand points to a data string, which may contain line feeds and carriage returns but must be terminated

by a final NULL character. Keyword operands must be separated by blanks and a semicolon must terminate each job like in a batch file.

Example:

```
LabelCommand("formatname=c:\\files\\emerald formatcount=(1,10)
partno=654321 quant=144;");
```

LabelJobQuery()

The LabelJobQuery() function can be used to obtain the current status of any active or waiting job using its job number as an argument. The information displayed in the Print Queue is the information that can be returned with LabelJobQuery().

Example:

```
status=LabelJobQuery(jobnumber, name, description, status, &total, &remain);
```

LabelJobCancel()

The LabelJobCancel() function cancels an active or waiting job in the Print Queue.

Example:

```
LabelJobCancel(jobnumber);
```

DDE_PrinterStatus()

The DDE_PrinterStatus() function can be used to retrieve the current status of any jobs currently printing. A file called n.dat will be written to disk, which will contain an 8-bit status string and a 4-bit label remaining count. You could then write a function to read the n.dat file. The DDE_PrinterStatus() function can retrieve status from Zebra, Datamax and Apollo printers.

Example:

```
DDE_PrinterStatus(printernumber, printerdata);
```

Timing Test: API vs. Command File Monitoring

Formats containing fixed fields were tested using two print methods supported by the software.

Method one used a sample API program. Method two used the Command File functions with Command File Monitoring enabled. With method one, the time to

print the first label was 1/2 second. Using method two, the time to print the first label using was 2 seconds.

If you would like the software to pause before printing a set of formats and allow you to test print or cancel the set, you would use the Test Print option. With the Test Print option turned on, when a new set of formats is processed, 3 options will be presented: Test print the format, Print all formats in the batch, or do not print any formats in the current batch. When the Print option is chosen, all formats selected in the current set will be printed.

API Examples

For more examples and further documentation regarding API, please visit our website.

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Dynamic Data Exchange (DDE)

See the Application Programming Interface (API) page.

Command Files

What is a Command File?	How do I Create a Command File?	Using Command files
Command File Clauses	Commands and Switches	Drag and Drop Support
Command File Monitoring		

What is a Command File?

The software provides the ability to print formats using commands contained in a Command File. This is similar to the DOS batch file facility.

The concept of a Command File is: Anything that can be done on the keyboard from the Print screen can be done with a Command File. This includes calling in a specific format for printing, filling in variables and defining a quantity to print. The purpose of the Command File is to automate tasks, eliminate re-keying of information already stored on a computer, or shelter the operator from the software.

How Do I Create a Command File?

Any text editor or word processor can create command Files, or it could be generated by another computer program.

Using Command Files

To use this function, you must create a Command File following certain rules. This file can reside on any drive and must have the file extension of **.cmd.** The file contains the name of the format or formats to be printed, the value of any variable fields, the value of any database search fields, which printer to send the formats to and the quantity to be printed for each particular set of formats.

Command File Clauses

formatname	jobdescription	append dbase	formatcount
singlejob	sort dbase	testprint	where
cancel job/cancel useprinter	fieldvalue	orderby	getstatus useprinter
useprinter	outputfile	clear useprinter	printername
eraserecords dbase	close	displaymsg	

formatname

The *formatname* clause is of the form:

formatname=<name>

<name> specifies which format is to be printed in this set. <name> must be a valid format name without the .fmt extension. If the format is located in the software's default directory only the name of the format excluding the extension is needed. If the format is **not** located in the default directory a full path with drive designator must be included. If the full path is not included in a command record, *formatname* will default to the last name used, if any. If used, this clause must be the first in the command record.

formatcount

The f*ormatcount* clause is of the form:

formatcount=<number>,<batchsize>

The <batchsize> parameter is optional. There should be no spaces separating the 2 parameters from the comma. If the format contains no incremented or decremented fields, <batchsize> is ignored; if included, <number> represents the actual number of formats to be printed. If the format contains incremented or decremented fields, <number> represents the number of batches and <batchsize> represents the size of the batch. If not included, the default <batchsize> is 1. This clause must be included in each command record. It must

follow the *formatname* clause and precede the *testprint* clause or any *fieldvalue* clauses.

testprint

The *testprint* option is of the form:

testprint=on

or

testprint=off

For succeeding records, the option retains the value it was last set to. It is initially set to off.

fieldvalue

The *fieldvalue* clauses in each command record are in the form:

<fieldname>=<value>

Each variable field or database search field must be specified using one of these clauses. There should be as many clauses as there are variable fields or database search fields on your label. <fieldname> is the name of the field on the format and the same as defined on the Text/Bar Code Field Specification Screen. <value> is the actual data to be placed in the field. If the data value contains spaces, the value should be placed within quotes (either single quotes (') or double quotes (")). If the data is too long to fit in the field, the data will be truncated to fit. If the data is less than the maximum length, the field will be padded with blanks. If no clause exists for a given variable field on the format, the field will be filled with blanks. All *fieldvalue* clauses must follow both the *formatname* and *formatcount* clauses. Also, each command record should contain all *fieldvalue* clauses necessary to produce the desired format.

useprinter

This command is carried forward for legacy applications and has been superceded by the printername clause

The *useprinter* clause is of the form:

useprinter=1

or

useprinter=12

or

useprinter=23

The purpose of useprinter is to select the correct printer for this format if you have more than one printer connected to the system. The index numbers used in the useprinter clause are not constant and may change as printers are added or printer properties are changed. It is better practice to identify a printer using the printername clause.

printername

The *printername* clause is of the form:

printername=”Production”

or

printername=”my_Printer”

The purpose of *printername* is to select the correct printer for this format if you have more than one printer connected to the system.

displaymsg

The *displaymsg* clause is of the form

displaymsg="variabletext"

The purpose of *displaymsg* is to institute a planned pause in a Command File to display a message on the screen. To restart the Command File you simply press any key. The "variable text" must be enclosed in single quotes (') or double quotes (").

jobdescription

The *jobdescription* clause is of the form:

jobdescription="variable text"

The purpose of the *jobdescription* clause is to include a brief description of the print job for identification purposes. This is helpful if you need to modify the job once it is in the print queue. Once the print job is in the print queue, it will be possible to distinguish one job from another. The "variable text" must be enclosed in single quotes (') or double quotes (").

singlejob

The *singlejob* clause is of the form:

singlejob=on

or

singlejob=off

The purpose of *singlejob* is to process one command file job at a time. If you have multiple jobs in a command file, jobs will be released to the print queue one at a time and sent to the printer much faster if *singlejob* is turned on. If *singlejob* is turned off, jobs in the command file will not be released to the print queue and sent to the printer until the entire command file is processed. The default value for the *singlejob* clause is off.

where

The where clause is of the form:

where=(condition)

The purpose of the where clause is to print database records based on a condition. The "condition" in the where clause consists of a valid database field name, one or more comparison or logical operators and a field value.

For example, if you need to print all records where Aisle number is 100, the where clause in the command file would be:

where=(AISLENUM = 100)

orderby

The *orderby* clause is of the form:

orderby=<fieldname>

The purpose of the *orderby* clause is to print database records in a specific order. If the order in which records are printed is important, you can select one or more database fields in which to sort on. The records will be printed based on the values in the database field(s) chosen. This clause is only valid when using a format that uses an ODBC data file.

outputfile

The *outputfile* clause is of the form:

outputfile="filename"

The purpose of the *outputfile* clause is to print the labels to a file instead of to a printer. When specifying the *outputfile* clause, you must provide the name of a file. Specifying the name of an existing file will append new information to previous information. Specifying a new file name will create the new file. The *outputfile* clause cannot be specified if the *useprinter* clause is being used in the same command file record.

For example, if you need to print the labels to a file called control.txt, the *outputfile* clause in the command file would be:

outputfile="control.txt"

eraserecords dbase

The *eraserecords dbase* clause is of the form:

eraserecords dbase=databasefile;

The purpose of the *eraserecords dbase* clause is to erase all records in a specific database file from within a command file. The *eraserecords dbase* clause must end with a semicolon (;).

For example, to erase all records from a part number database, the *eraserecords dbase* clause in the command file would be:

eraserecords dbase=parts.dbf;

append dbase

The *append dbase* clause is of the form:

append dbase=databasefile inputfile=txtfilename;

The purpose of the *append dbase* clause is to append a text file to an existing internal database file from within a command file. The *append dbase* clause must end with a semicolon (;).

For example, to append a part number text file that was downloaded from a host computer, the append dbase clause would be:

append dbase=parts.dbf inputfile=parts.txt;

sort dbase

The *sort dbase* clause is of the form:

sort dbase=databasefile orderby=fieldname;

The purpose of the *sort dbase* clause is to sort all records in a specific database file using a specified sorting order. The s*ort dbase* clause must end with a semicolon (;).

For example, to sort a part number database by part number, the *sort dbase* clause would be:

sort dbase=parts.dbf orderby=(partno);

cancel job and cancel useprinter

The cancel clause has two forms.

The cancel job clause is of the form:

cancel job=number;

The *cancel useprinter* clause is of the form:

cancel useprinter=number;

The purpose of the *cancel job* clause is to cancel a job based on the job number. The purpose of the *cancel useprinter* clause is to cancel all jobs specific to a printer. If you do not know the exact number of labels you will need for a specific job, your command file can send a quantity greater than a desired amount. Then at the end of the day, when the required number of labels are printed, a *cancel job* or *cancel useprinter* clause can be sent to cancel the remaining labels in the job. The *cancel job* and the *cancel useprinter* clauses must end with a semicolon (;). Both cancel job and cancel useprinter cannot be used in the same command file record.

For example, if the currently printing job is the first job, the *cancel job* clause would be:

cancel job=1;

If you have multiple printers attached to your PC and you would like to cancel all jobs that are printing to a specific printer, the cancel useprinter clause should be used.

For example, if the currently printing job is on printer number 3, the *cancel useprinter* clause would be:

cancel useprinter=3;

getstatus useprinter

The *getstatus useprinter* clause is of the form:

getstatus useprinter=number;

The *getstatus useprinter* command can be used to get the current printing status of the printer. Status returned from the printer will be written to a file called n.dat, where n is the number of the printer number defined, and is the number specified on the *getstatus* line.

If you have multiple printers defined and attached to your PC and you would like to retrieve the status from the printer in which the jobs are currently printing, printer number 3 for example, the command would be:

getstatus useprinter=3;

The status will be written to a file called 3.dat.

If the *getstatus* command is executed prior to printing a label format, the .dat file will be written to the directory where the label software's executable file is located. If *getstatus* is executed after generating a label, the .dat file will now be written to the directory where that particular label format is stored.

The *getstatus useprinter* command can only be used with a Fargo/Datamax, Zebra, Intermec or an Apollo printer.

clear useprinter

The *clear useprinter* clause is of the form:

clear useprinter=number;

The *clear useprinter* command can be used to clear the current label format from the print buffer.

If you have multiple printers defined and attached to your PC and you would like to clear a label from the print buffer of the printer in which the jobs are currently printing, printer number 3 for example, the command would be:

clear useprinter=3;

The *clear useprinter* command can only be used with a Fargo/Datamax printer.

close

The close clause is of the form:

close;

When issued, the *close* command will exit the label software.

Commands and Switches

To run the software using the Command File facility, the command is typed at the DOS prompt using the following structure: c:\subdirectory\EASY commandfilename [switch] [starting record] Where: subdirectory is the name of the directory that contains the program files. - EASY is the command to start the program. - commandfilename is the name of the Command File you wish to run. - [switch] is one of the following:

The program will watch the hard disk for any changes to the specified Command File. When changes are made, the Command File will be executed within one quarter of a second. Command File Monitoring can also be set within the program configuration options.

/W Instructs the program to ENABLE monitoring mode.

/W- Instructs the program to DISABLE monitoring mode.

If Command File Monitoring was enabled within Program Configuration Options, this switch parameter will override the current setting.

/D Instructs the program to display the format to the screen.

/S Instructs the program to print one command file job at a time. Subsequent command file jobs are not read until the current job has completed printing.

/R nnn Allows you to specify a starting record, where nnn is the record number. If the /R switch parameter is specified on the command line, you will need to give a starting record number. If the /R switch parameter is not specified on the command line, starting record is 1.

and

- [starting record number] applies to nnn, above, when a **/R** switch is specified as a parameter.

For example, to run the software using the Command File c:\wineasy\store.cmd (where c:\wineasy is where the software was originally installed) and to start with the first record, at the DOS prompt, type:

c:\wineasy\easy store

To run the same Command File and start at the fifth record, type:

win c:\wineasy\easy store /R 005

To run the same Command File with monitoring mode enabled, type:

win c:\wineasy\easy store /W

If the software is configured for User Signon, the **/U** and the **/P** switch parameters can be used to by-pass the Signon dialog box.

/U id Allows you to specify a User Identifier, where id is the user ID as defined in the Add, Change or Delete Users screen. This switch must be used with the **/P** switch parameter.

/P pass Allows you to specify a user password, where pass is the user PASSWORD as defined in the Add, Change or Delete Users screen for the User ID specified in the **/U** switch parameter. This switch must be used with the **/U** switch parameter.

For example, if User Signon is required and you want to run the software using the Command File **c:\wineasy\store.cmd**, type the following from the C: prompt:

win c:\wineasy\easy store /U John /P printing

Where:

John is the User ID and

printing is John's password.

NOTE: A user can also be defined as having a blank PASSWORD. When User Signon is required, the user must enter the ID. Then, the user can press enter to by-pass the PASSWORD.

If starting the software from the command line, you will need to enter the following:

win c:\wineasy\easy commandfile /U id /P

/E can be used to delete a command file that is specified on the command line. As an example, the command line:

easy label.cmd /e

would delete the file "label.cmd" after it has been processed. The /E switch can be used in addition to the /W or /M switches to delete the monitored command file.

Command files that are processed by "drag-and-drop" onto the EASYLABEL window are NEVER deleted, regardless of the /E switch.

Command File Monitoring Mode

The software can be placed in a command file monitoring mode. The purpose of the command file mode will be to watch the hard disk for changes in a Command File and automatically print the specified number of formats. When Command File Monitoring is enabled, the software will watch for a change in a specified Command File every quarter second. A Command File will start up the program either as a minimized icon or as fully maximized. If you would like the software to start as a minimized icon, you will need to configure the program properties to Run Minimized. To configure the program this way, follow these steps:

- Highlight the program icon and right-click on it.
- Choose Properties from the menu.
- Click on the Shortcut tab.
- Click on the drop-down menu next to Run.
- Choose Run Minimized and click OK.

If the software starts minimized, you can view the Print Queue by clicking on the minimized icon. Then choose the F2 key from your keyboard.

If the software starts maximized, you can work within the program; however, Command File monitoring mode is halted until the software is minimized. The monitor mode is also disabled if you minimize the software while working on a format or working in a database. When in monitoring mode, the caption on the Windows Task Bar shows the mode it is in. For example, if in Command File Monitoring mode, the caption will be Command Monitoring. If minimized while editing a format, the caption will be Edit Format [formatname].

Drag and Drop

The drag and drop feature supported by Windows is also supported for running Command Files. You can process a command file by dragging the Command File icon to the Software's icon (or a shortcut to the Software) and then releasing the mouse button.

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Creating a Connection to an External Database

Selecting the External Database within the software

1. Launch the label software.

2. Create a new format or use an existing format.

3. Add a new field or use an existing field.

4. Edit the field parameters as follows:

- Enter "Field Name" (optional)
- Select Source of Data - "D" for Database, press the tab key
- Select Database System - Select 'Other Database System'.
- Enter the Connection String - or you can click the 'Prompt' button to be prompted through the construction of the connection string. The Connection string is created by first choosing a Database provider and then creating or choosing a connection to the database. How this is done will depend on your Database Provider but a walk-through sample can be found in Appendix I.

- Select Table Name - Select the table name that you wish to use, press the tab key.
- Enter Search Fields - Enter 1-3 fields to search the database on, press the tab key. (This option will only appear for the first field that is created using the external database.)
- Enter Search Field Name - Select the field name to be searched on, press the tab key. (This option will only appear for the first field that is created using the external database.)
- Enter Data Field Name - Select the field name which contains the data from the external database to be placed on the format.
- Complete all other information within the parameter screen and click OK.
- Repeat steps 3 and 4 to add more fields that use the external database as their Source of Data.

NOTE: If you are using a 16-bit external database, you MUST have the 16-bit ODBC Administrator installed on your system in addition to the 32-bit ODBC Administrator. Please refer to that 16-bit database application's documentation for more information.

Scanning Bar Codes

To scan bar codes, choose **Tools | Scan Bar Codes** from the print menu.

The screen will show the following lines:

Set up scanner and begin scanning. Data read will appear below.

When finished, click Quit or hit the ESC key.

NOTE: This function will work with a keyboard wedge scanner, check with your Reseller for more information.

Linear Bar Code

Maybe the oldest of the Automatic Identification and Data Capture (AIDC) technologies, barcode can be looked upon as the best known and probably most successful to date of the technologies. We are all familiar with the basic barcode on our box of cereal, or the jar of honey that we buy in the supermarket. This barcode is called UPC/EAN and is but one variation of over 250 barcodes that have been designed over time. Barcodes like this are referred to as linear barcodes as that are made up off a collection of bars and spaces side by side. Fortunately many of these barcodes have never gained broad acceptance and we usually only consider 10-12 linear barcodes. The most common examples in use today are: UPC/EAN, Code 128, Code 39, Code 93, and Interleaved 2 of 5. Typical data content capacity varies from 8 to 30 characters with some barcodes restricted to numerals only, and others using full alphanumeric information.

Linear barcodes are used in many applications where the use of a simple numeric or alphanumeric code can provide the key to a database of "products." The most obvious limitation is the amount of data that can be stored in a linear barcode, though other problems can exist with the substrate that the barcode is printed on providing insufficient contrast or poor ink receptivity which can cause the quality of the barcode to be less than ideal.

93i

History and Overview

Many applications require certain capabilities that are not supported by current linear symbologies. Some of these capabilities include the ability of encoding Unicode (double byte characters), the Extended Channel Interpretation (ECI) protocol, a linked sequence, an indication of the existence of an associated data carrier and error correction. Additionally, there are applications which require more efficient encoding of certain types of data than is currently available in linear symbologies including the encodation of bytes (both for byte data and byte-wise character sets), extended and Full ASCII, and mixed alphanumeric data such as the Code 39 character set. 93i was developed specifically to support these applications as well as other general applications. The 93i symbology encompasses and extends the Code 93 symbology.

Specifications:

Character Set

(1) All 128 ASCII characters, i.e. ASCII character values 0 to 127 inclusive, in accordance with ISO 646

(2) All extended ASCII characters, i.e. ASCII character values 128 to 255 inclusive, in accordance with ISO/IEC 8859-1

(3) All 65 536 Unicode characters, i.e. character values {0} to {65 535} per Unicode 2.0 and Unicode 2.1

(4) Three non-data function characters

(5) Four combinations of Start and Stop characters

Symbology Type

Continuous, edge to similar edge decodable

Elements per Symbol Character

6 elements, comprising 3 bars and 3 spaces, each of 1, 2, 3, or 4 modules in width (Stop character: 7 elements comprising 4 bars and 3 spaces)

Character Self-checking

No

Symbol Length

Variable

Bidirectionally Decodable

Yes

Symbol Check Characters

2 check characters or 6 Reed Solomon error correction characters

Data Character Density

5,4 modules per numeric character 9 modules per symbol character for alphanumeric data - 13,5 modules per byte 27 modules per Unicode character

Non-data Overhead

Equivalent of 38 modules including check characters or Equivalent of 91modules including error correction characters

ECI Protocol Support

Yes

Special Features

Error correction, reader initialization, linked sequencing, and associated data carrier indication

Examples

Codabar

History and Overview

Codabar is a binary level barcode originally developed by Monarch Marking in 1972. It is also called **NW-7** because all Codabar characters are constructed from four bars and the three intervening spaces. It is a self-checking, discrete symbology having 16 characters in its set: the numbers 0 to 9, and the $: / . + - characters. There are four different start/stop characters A, B, C, and D that are generally used in matching pairs and may not appear elsewhere in the barcode. Codabar is used in libraries, blood banks, membership cards, the overnight package delivery industry, and a variety of information processing applications.

The numeric characters each have one wide bar and one wide space within the group of four bars and three spaces. The alpha start/stop characters are constructed with one wide bar and two wide spaces. Quiet zone is 10 times the width of the narrow bar. There is no checksum defined as part of the Codabar standard. But when it is used, it is inserted between the last data character and stop character. Modulus 16 is generally used for the checksum.

Specifications:

Character Set

0 - 9, $, -, :, /, ., +

There are also four unique start/stop characters designated A,B,C and D.

Encodation

Four bars and three spaces are required to encode a character.

Allowable Sizes

Minimum "X" Dimension:
.0075 inches

Wide to Narrow Ratio:
2:1 to 3:1 for "X" Dimension > .020 inches
2.2:1 to 3:1 for "X" Dimension < .020 inches

Allowable Symbol Height:
The greater of .25 inches or 15% of the symbol length.

Code 39

History and Overview

Code 39 is a widely used industrial barcode and is mandated for some automotive industry and Department of Defense labels, because of its ability to represent alphanumeric data. Code 39 is defined in American National Standards Institute (ANSI) standard MG10.8M - 1983, and is also known as 3 of 9. It is discrete, self-checking, variable length symbology that can be readily printed by a variety of technologies.

Every Code 39 character has five bars and four spaces, making a total of 9 elements. Of these nine elements, three are wide and six are narrow, making Code 39 a two-width code. Whether numeric or alphanumeric data is encoded, Code 39 requires the same amount of space - substantially longer than ITF or alphanumeric Code 128. The length of a Code 39 symbol limits its use on corrugated board because the shipping container is often not large enough for the amount of space required for a readable code, or the symbol is too large for scanning equipment to read. Code 39 has historically been found on paper labels or on documents such as factory work orders, where smaller "X" dimensions are possible.

The Code 39 character set includes the digits 0-9, the letters A-Z (upper case only), and the following symbols: space, minus (-), plus (+), period (.), dollar sign ($), slash (/), and percent (%). A Code 39 symbol begins and ends with an asterisk (*), which is this symbology's start/stop code. It does not require a checksum, although a modulo 43 check digit may be appended for increased data integrity.

Each character is separated from its neighbor by a loosely toleranced intercharacter gap that contains no information. Because of the mirror image

relationship between start/stop character and the letter "P," an upper limit is specified for the intercharacter gap width in order to prevent short reads, especially in the case of partial scans.

Although there are only 43 data characters in Code 39's character set, it is possible to encode all 128 ASCII characters using Code 39's Full ASCII feature. If a reader is in its Full ASCII mode, the symbol $, /, %, and + are used as precedence codes with the 26 letters.

Specifications:

Character Set

0-9, A-Z, -, ., %, /, $, space, +, and *

Encodation

Five bars and four spaces are required to encode a character. Three of the nine bars and spaces are wide while the other six are narrow.

Start/Stop Pattern

Always the asterisk or star character "*".

Code Type

Binary, varying length.

Human Readable

Optional, although it is typically used.

Check Character

Optional (modulus 43 calculation)

Encoded Information

Contingent upon data requirements.

Allowable Size

Minimum "X" Dimension:
.0075 inches

Wide to Narrow Ratio:
2:1 to 3:1 with "X" Dimension > .020 inches
2.2:1 to 3:1 with "X" Dimension < .020 inches

Allowable Symbol Height:
The greater of .25 inch or 15% of the symbol length.

Code 93

History and Overview

Code 93 was introduced in 1982. It was specifically designed to provide a more compact version of Code 39 due to its high-density complement. Code 93 is a variable length, continuous symbology employing four element widths. Each Code 93 character has nine modules that may be either black or white. Each character contains three bars and three spaces. Each character begins with a bar and ends with a space. This is a (9,3) code hence the name.

Code 93 has 47 characters in its character set. The start/stop code is represented by the symbol ?, and the four unique circle codes, ($), (%), (/), and (+), are used as precedence characters to unambiguously represent all 128 ASCII characters in a similar fashion to Code 39's Full ASCII feature. Because the special "circle codes" are used for the Full ASCII feature, the ambiguity problem present with Code 39 is eliminated.

Specifications:

Character Set

47 characters; 0-9, A-Z, -, ., space, $, /, +, %, ($), (%), (/), (+) and ?

Encodation

Three bars and three spaces are required to encode a character.

Start/Stop Pattern

The symbol ? and the four unique circle code, ($), (%), (/) and (+).

Code Type

Binary, varying length.

Human Readable

Optional, although it is typically used.

Check Character

Optional (Modulus 43 calculation)

Encoded Information

Contingent upon data requirements.

Allowable Sizes

Minimum "X" Dimension:
.0075 inches

Wide to Narrow Ratio:
2:1 to 3:1 with "X" Dimension > .020 inches
2.2:1 to 3:1 with "X" Dimension < .020 inches

Allowable Symbol Height:
The greater of .25 inch or 15% of the symbol length.

Code 128

History and Overview

Code 128 was introduced in 1981 as a very high-density alphanumeric symbology. Since 1990, it's use has been increasing in a variety of applications. It has the ability to adapt itself to all-numeric data or to alphanumeric data. This is done with "start" and "shift" codes specifying that the data following is numeric, alphanumeric, or special characters. These compression techniques minimize space while allowing for numeric and alphanumeric data. Because of the compact symbol, the numeric version is used whenever possible, but even alphanumeric Code 128 is more compact than Code 39. It is a variable length, continuous symbology with multiple element width. It is often selected over Code 39 in new applications because of its density and because it offers a much larger selection of characters.

The Code 128 character set includes the digits 0-9, the letters A-Z (upper and lower cases), and all standard ASCII symbols and control codes. The codes are divided into three subsets A, B, and C. There are three separate start codes to

indicate which subset will be used; in addition, each subset includes control characters to switch to another subset in the middle of a barcode. Subset A includes the standard ASCII symbols, digits, upper case letters, and control codes. Subset B includes standard ASCII symbols, digits, upper and lower case letters. Subset C compresses two numeric digits into each character, providing excellent density.

Each character consists of 3 bars and 3 spaces, each of which may be 1, 2, 3, or 4 elements wide (1 element = 1/11th of the character width). The bars always use an even number of elements and the spaces use an odd number of elements. This provides the basis for a character-by-character consistency check during scanning. Each Code 128 barcode includes a Modulo 103 checksum.

Specifications:

Character Set

The full ASCII set (128 characters). One of the advantages of this symbology is the ability to encode all 128 characters of the standard ASCII code chart.

Encodation

Three bars and three spaces are required to encode a character.

Start/Stop Pattern

One of three start characters A, B, or C shall be used at the beginning of the symbol to define initial code set. The stop pattern is seven elements comprised of four bars and three spaces. The Start/Stop pattern shall not be used within the symbol nor shown in human-readable interpretation.

Code Type

Modular, varying length (UCC/EAN - 128 has several formats defined).

Human Readable

Optional; although it is typically used.

Check Character

Required (Modulus 103 calculation).

Encoded Information

Contingent upon data requirements.

Allowable Sizes

Minimum "X" Dimension:
.0075 inches.

Allowable Symbol Height:
The greater of .25 inch or 15% of the symbol length.

EAN/UCC 8

History and Overview

The European Article Numbering system (EAN) is a superset of UPC and was initially introduced in 1977 by an EAN association of EEC countries that included France, Germany, England, Belgium, Luxembourg, Denmark, Finland, Norway, Sweden, Switzerland, Italy, Holland and Austria. In 1978, Japan and Spain joined. In 1989 Australia also joined .

EAN has two versions, EAN-8 and EAN-13, encoding 8 and 13 digits respectively. An EAN-13 symbol contains the number of bars as UPC Version A, but encodes a 13th digit from the character set pattern of the left-hand 6 digits, in the same manner as the encodation of the check digit in a UPC Version E symbol.

Specifications

Character Set

0 - 9

Encodation

Two bars and two spaces are required to encode a character

Start/Stop Pattern

Always starts and stop with 3 elements: a narrow bar, narrow space, and narrow bar.

Code Type

Modular, fixed length (thirteen digits with EAN-13; eight digits with EAN-8)

Human Readable

EAN-13 all thirteen digits required; EAN-8 eight digits required (the Flag Character, Numbering System Character, and the Check Digit are implied).

Check Digit

Required (Modulus 10 calculation).

Encoded Information

Flag Character (Country Code) - Two to three digits

Manufacturer Identification Number - Four to five digits

Product Identification Number - Five digits

Check Digit - One digit

Allowable Sizes

Sizes for the EAN-13 are determined by a "magnification" factor which is based on the "X" dimension size. These magnifications range from 80% to 200% of the normal size (1.46 inches in width, 1.020 inches in height, "X" dimension - 13 mils).

EAN/UCC 13

History and Overview

The European Article Numbering system (EAN) is a superset of UPC and was initially introduced in 1977 by an EAN association of EEC countries that included France, Germany, England, Belgium, Luxembourg, Denmark, Finland, Norway, Sweden, Switzerland, Italy, Holland and Austria. In 1978, Japan and Spain joined. In 1989 Australia also joined . Today many other countries have joined, and EAN-13 is used worldwide for marking retail goods. It encodes 13 characters: the first two to three digits are flag characters which represent a country code, followed by 10 data digits and a checksum.

EAN has two versions, EAN-13 and EAN-8, encoding 13 and 8 digits respectively. An EAN-13 symbol contains the number of bars as UPC Version A, but encodes a 13th digit from the character set pattern of the left-hand 6 digits, in the same manner as the encodation of the check digit in a UPC Version E symbol.

Specifications:

Character Set

0 - 9

Encodation

Two bars and two spaces are required to encode a character

Start/Stop Pattern

Always starts and stop with 3 elements: a narrow bar, narrow space, and narrow bar.

Code Type

Modular, fixed length (thirteen digits with EAN-13; eight digits with EAN-8)

Human Readable

EAN-13 all thirteen digits required; EAN-8 eight digits required (the Flag Character, Numbering System Character, and the Check Digit are implied).

Check Digit

Required (Modulus 10 calculation).

Encoded Information

Flag Character (Country Code) - Two to three digits

Manufacturer Identification Number - Four to five digits

Product Identification Number - Five digits

Check Digit - One digit

Allowable Sizes

Sizes for the EAN-13 are determined by a "magnification" factor which is based on the "X" dimension size. These magnifications range from 80% to 200% of the normal size (1.46 inches in width, 1.020 inches in height, "X" dimension - 13 mils).

FIM

History and Overview

FIM or Facing Identification Mark is a 9 position bar/no-bar pattern. The FIM patterns are used by business mailers on preprinted mailing pieces for compatibility with various United States Postal Service automatic sorting systems. There are four FIM patterns (A, B, C, D) that can be printed.

FIM A is used on Courtesy Reply Mail, with preprinted Postnet symbology in the address.

FIM B is used on Business Reply, Penalty and Franked mail with no preprinted Postnet symbology.

FIM C is used on Business Reply, Penalty and Franked mail with preprinted Postnet symbology.

FIM D is used for OCR readable mail with no Postnet symbology.

Interleaved 2 of 5

History and Overview

Interleaved 2 of 5 is a high-density, self-checking, continuous numeric symbology. It gets the name "Interleaved" because two numeric digits are interleaved together, with the bars representing one digit and the spaces representing a second digit. It is one of the most popular symbologies used by the shipping and warehouse industries for identification. The binary level barcode is suitable for printing on rough-surfaced materials, such as corrugated boxes or cardboard. The Distribution Symbology Study Group has recommended 2 of 5 as the standard for numeric labeling of corrugated shipping containers. It has been adopted by the Uniform Product Code Council as the standard symbology for outer shipping containers in the grocery industry. It is also used in the medical and automotive fields.

Every Interleaved 2 of 5 character actually encodes two digits; one in the bars, and one in the spaces. There are five bars, two of which are wide and three of which are narrow. Similarly, there are five spaces in each character, two of which are wide and three of which are narrow. Each digit has its own unique 2 out of 5 arrangement.

Unfortunately, a partial scan has a high probability of decoding as a valid, but shorter Interleaved 2 of 5 symbol. This is due to the simple nature of the start and stop patterns. Because of this partial scan problem, Interleaved 2 of 5 is best used in a fixed-length application, with all reading equipment programmed to

accept messages only of the correct length. 14 or 16 digits are generally used for the distribution industry.

Bearer bars are used to help prevent the partial scan from being decoded as a valid Interleaved 2 of 5 symbol. They must touch the top and bottom of all of the data bars. Minimum width of bearer bars should be three times of the narrow bar width. A partial scan of the symbol will now penetrate one or more bearer bars, and the resulting apparent arrangement of wide and narrow elements will not bear any resemblance to a start or stop character to prevent an erroneous decode.

An item to note with respect to Interleaved 2 of 5 is that the number of digits in the barcode must be even. This is due to interleaving (one odd digit for every even digit). As such, sometimes a zero digit must be added to the beginning of the barcode to make the total digits an even number. It is recommended to use a check digit and Modulo 10 is generally used for the checksum.

Specifications:

Character Set

0 - 9

Encodation

I 2 of 5 pairs characters and encodes the first digit of the pair on five bars and the second digit of the pair on the five interleaving spaces. Two of the five spaces or bars used to encode a character are always wide

Start/Stop Pattern

Starts with four narrow elements beginning with a bar, and stops with a wide bar followed by two narrow elements.

Code Type

Binary, varying length. I 2 of 5 requires an even number of digits to encode information.

Human Readable

Optional, although it is typically used.

Check Digit

Optional; however, Modulus 10 required when using the SCC-14 specification.

Encoded Information

Contingent upon data requirements although an even number of digits is required. A leading zero is used if there is an odd number of digits available.

Allowable Size

Minimum "X" Dimension:
0.075 inches

Wide to Narrow Ratio:
2:1 to 3:1 with "X" Dimension > .020 inches
2.2:1 to 3:1 with "X" Dimension < .020 inches

The SSC-14 specifications outline "magnifications" that are allowable.

Allowable Symbol Height:
The greater of .25 inches or 15% of the symbol length.

MSI

History and Overview

MSI Plessey Code is a pulse-width modulated non-self checking code. Each character is represented by 4 bars; a narrow bar represents a binary 0 and a wide bar represents a binary 1. The bars have the binary weights 8-4-2-1. It is possible to encode the digits 0 through 9 and the letters A through F, although this code is most often used just for numeric information.

In MSI code the zero bit is a one-unit bar followed by a two-unit space and the one bit is a two-unit bar followed by a one-unit space. Complete four bit characters are thus 12 units wide, which is large for a numeric symbology. The MSI symbol includes a start pattern, data characters, one or two check digits, and a stop pattern. A MSI Plessey barcode always includes a Modulo 10 checksum and may include a second checksum.

Typically found on Shelf Pricing Labels in a Retail Store. Different check digit configurations are available depending on the application. It is numeric only and variable length, 1 check character.

PLANET Code

History and Overview

Like POSTNET Codes, PLANET Codes have 12 digits and consist of tall and short bars. PLANET symbology is the inverse of POSTNET because each POSTNET digit has two tall and three short bars and each PLANET digit has three tall and two short bars.

All PLANET barcodes include a five-bar checksum digit or correction character. This digit is always the number which, when added to the sum of the other digits in the barcode, results in a total that is a multiple of 10.

Plessy

History and Overview

The Plessey Company in England originally developed Plessey Code with specifications first dated in 1971. Several variations were created including the MSI, Anker, and Telxon codes. Of these, the MSI Plessey is still in use in the United States. It is used in libraries and often for retail grocery shelf marking.

POSTNET

History and Overview

POSTNET is widely used by the U.S. Postal Service to automatically sort mail. It is a clocked technology in which a scan through the bottom of the bars provides a timing track. POSTNET is a numeric symbology that uses five bars and four spaces for each encoded digit. A constant width and spacing of the bars is used throughout the symbol. In a given character, two of the bars are tall and the remaining three are short. The tall bars are about 1/10 of an inch high, and the short bars are about half that height at 1/20 of an inch. The code begins and ends with a tall bar ("frame bar") and may contain a 5-digit ZIP code, a 9-digit ZIP+4 code, or an 11-digit Delivery Point Code. POSTNET code has a trailing checksum that is Modulo 10 of the sum of the digits, which is inserted after the ZIP code and before the ending frame bar.

UCC-128/EAN-128 SSCC-18/SCC-14

History and Overview

The symbology specified for the representation of Application Identifier data is UCC/EAN-128, a variant of Code 128, exclusively reserved to EAN International

and the Uniform Code Council (UCC). It is not intended to be used for data to be scanned at the point of sales in retail outlets.

UCC/EAN-128 offers several advantages. It is one of the most complete, alphanumeric, one-dimensional symbologies available today. The use of three different character sets (A, B and C), facilitates the encoding of the full 128 ASCII character set. Code 128 is one of the most compact linear bar code symbologies. Character set C enables numeric data to be represented in a double density mode. In this mode, two digits are represented by only one symbol character saving valuable space. The code is concatenatable. That means that multiple AIs and their fields may be combined into a single bar code. The code is also very reliable. Code 128 symbols use two independent self-checking features which improves printing and scanning reliability.

UCC/EAN-128 bar codes always contain a special non-data character known as function 1 (FNC 1), which follows the start character of the bar code. It enables scanners and processing software to auto-discriminate between UCC/EAN-128 and other bar code symbologies, and subsequently only process relevant data.

The UCC/EAN-128 bar code is made up of a leading quiet zone, a Code 128 start character A, B, or C, a FNC 1 character, Data (Application Identifier plus data field), a symbol check character, a stop character, and a trailing quiet zone.

The purpose of UCC/EAN-128 is to establish a standard way of labeling a package with more information than just a product code. It provides supplemental information such as batch number and "use before" dates.

There are two main components of UCC/EAN-128: the data with its Application Identifier and the bar code symbology used to code the data.

UCC/EAN APPLICATION IDENTIFIER (AI)

An Application Identifier is a prefix code used to identify the meaning and the format of the data that follows it (data field).

There are AIs for identification, traceability, dates, quantity, measurements, locations, and many other types of information.

For example, the AI for batch number is 10, and the batch number AI is always followed by an alphanumeric batch code not to exceed 20-characters.

The UCC/EAN Application Identifiers provide an open standard which can be used and understood by all companies in the trading chain, regardless of the company that originally issued the codes.

Identification Numbers

These AIs contain data to identify:

An article, the data field includes the EAN-8, EAN-13 or EAN-14 item identification number. The AI for an article is 01 plus up to a 14-digit number.

A logistic unit, which must be given a unique serial number called the Serial Shipping Container Code (SSCC). It provides companies with a facility to identify logistic units (pallets, drums, rolls) for tracking and tracing purposes. The SSCC AI is 00 followed by an 18-digit number identifying the individual transport packages. This code can be used for tracking the packages and used for reception operations.

A returnable asset, the data field includes the EAN-13 number of the asset plus an optional serial number.

Traceability Numbers and Dates

These AIs allow data to be encoded that provides traceability of individual products or dispatch units throughout the supply chain. This category includes Batch/Lot Number, Serial Number, Production Date, Minimum Durability Date and Maximum Durability Date.

Measurements and Quantities

These AIs allow quantities and trade measurements to be encoded for items which may vary in content (quantity, length, weight, etc.) and logistical measurements for warehouse space management systems and transportation services. An example is net weight in kilograms. The AI is 3100 to 3109 with the last digit indicating the placement of the decimal point in the data following. The data that follows is a 6-digit number.

Transaction References and Location Numbers

These AIs allow data to be encoded that provide transaction references and location numbers facilitating the delivery, order, and invoice reconciliation process. They can also identify shipping origin, and help to sort shipments. These AIs include Customer's Purchase Order Number, Bill to (invoice to) Location Number, and Ship to (deliver to) postal code. The "Ship To" AI, for example, is 420 followed by up to 20 alphanumeric characters of data.

The following is a partial list of other AIs. The "Content" column is a description of the data to be encoded. The "AI" column is the Application Identifier number. The "Data Structure" column is the structure of the data that follows the AI number. Please note that some AIs are two digits long while others are three or four digits long.

UCC Application Identifier (AI) Chart

NOTE: For date fields that only need to indicate a year and a month, the day field is set to "00".

*Plus one digit for length indication.

**Plus one digit for decimal point indication.

UCC-12 (UPC A)

History and Overview

The Universal Product Code (UPC) has been successfully employed in the retail industry in the United States and Canada since 1973. UPC is a coding system as well as a symbology; it is designed to uniquely identify a product and its manufacturer. There are three versions in UPC code; Version A, Version E and Version D. Version D was originally defined but never used.

The actual UPC code is a 12-digit code. In February 2000, the UCC (Uniform Code Council) implemented a change to the UPC-A barcode. If you applied for and received your UCC Company Prefix before February 2000, the first 6 digits represent the manufacturer of the labeled item. The next 5 digits will identify the product and digit 12 is a check digit. If the UCC Company Prefix was assigned to you after February 2000, it will be variable in length. For example, the manufacturer's identification may now be 8 digits and the product identification would be only 3. The last digit remains a check digit.

The first digit of the UPC-A Code represents the number system as well as being part of manufacturer's identification. Number systems "0", "6" and "7" are assigned with the five digits to identify the manufacturer.

UPC A Numbering System

The final digit it a check digit whose value is mathematically calculated based on the first eleven digits encoded in the symbol. A weighting scheme (the weighting alternates between 1 and 3) is used in its calculation. So the check digit also protects against transportation errors if the data is manually entered.

Calculating the Checksum

The checksum is a Modulo 10 calculation.

1) Add the values of the digits in positions 1, 3, 5, 7, 9, and 11.

2) Multiply this result by 3.

3) Add the values of the digits in positions 2, 4, 6, 8, and 10.

4) Sum the results of steps 2 and 3.

5) The check digit is the smallest number which, when added to the result in step 4, produces a multiple of 10.

Checksum Example

Example: Assume the barcode data is 08137919805.

1) 0 + 1 + 7 + 1 + 8 + 5 = 22

2) 22 x 3 = 66

3) 8 + 3 + 9 + 9 + 0 =29

4) 66 + 29 = 95

5) 95 + X = 100 (next highest number of 10), therefore X = 5 (checksum).

UPC E0

History and Overview

UPC-E is a variation of the UPC-A symbol that is used for the number system 0. It has six explicitly encoded data digits, and an implicitly encoded seventh digit (check character). It is suited for identifying products in small packages.

In addition to the requirement that the first digit of the barcode (number system) must be zero, there are four rules that determine what UPC codes can be printed using the compressed UPC-E format:

If the last 3 digits of the manufacturer's number are 000, 100, or 200, the valid product code numbers are 00000 - 00999 (1,000 numbers).

If the last 3 digits of the manufacturer's number are 300, 400, 500, 600, 700, 800, or 900, the valid product code numbers are 00000 - 00099 (100 numbers).

If the last 2 digits in the manufacturer's number are 10, 20, 30, 40, 50, 60, 70, 80, or 90, the valid product code numbers are 00000 - 00009 (10 numbers).

If the manufacturer's number does not end in zero, the valid product code numbers are 00005 - 00009 (5 numbers).

Specifications

Character Set

0 - 9

Encodation

Two bars and two spaces are required to encode a character

Start/Stop Pattern

Always starts and stop with 3 elements: a narrow bar, narrow space, and narrow bar.

Code Type

Modular, fixed length (twelve digits with UPC-A, six explicitly encoded but eight illustrated human readable digits with UPC-E).

Human Readable

UPC-A all twelve digits required. UPC-E six digits required (the Number System Character and the Check Digit are implied), but the UCC promotes printing all eight digits.

Check Digit

Required (Modulus 10 calculation)

Encoded Information

Number System Character (one digit)

Manufacturer Identification Number (five digits)

Product Identification Number (five digits)

Check Digit (one digit)

Allowable Sizes

Sizes for the UPC-E are determined by a "magnification" factor which is based on the "X" dimension size. These magnifications range from 80% to 200% of the nominal size, or 100% size (1.46 inches in width, 1.020 inches in height, "X" dimension - 13 mils).

UPC E1

History and Overview

Typically used for shelf labeling in the Retail environment. It is numeric only and fixed length.

2D

2D Bar Code

A newer area in the world of barcode is the two-dimensional versions. Several variations of 2D are available and as these do not all comprise bars and spaces the more accurate name of 2D symbologies is used. 2D symbologies provide a means of storing large amounts of data in a very small space. Whether you consider stacked symbologies, matrix symbologies, or packet symbologies. Examples of the three types include PDF417, Code 49, and Code 16K (stacked); Code One, Maxicode, DataMatrix, Aztec Code, and QR Code (matrix); and Super Code (packet).

2D symbologies have a major advantage over linear barcode. They can store vast amounts of data. Individual symbols can store as much as 7000 numeric only or 4200 alphanumeric characters. Many of the symbologies also have the ability to use a device called structured append that allows messages to be split over multiple symbols, providing almost infinite storage space. The disadvantage of the 2D symbologies is that a special scanner is required. Matrix symbologies need a vision based scanner to read the data, though some of the stacked symbologies can be read with a rastering laser scanner. Except to see many new scanners with variations in technology in the next year or so.

Aztec Code

History and Overview

Aztec Code was invented by Andy Longacre of Welch Allyn Inc. in 1995 and is in the public domain. Aztec Code was designed for ease-of-printing and ease-of-decoding. The symbols are square overall on a square grid with a square central bullseye finder. The smallest Aztec Code symbol is 15x15 modules square, and the largest is 151x151. This small version encodes 13 numeric or 12 alphabetic characters, while the largest Aztec Code symbol encodes 3832 numeric or 3067 alphabetic characters or 1914 bytes of data. No quiet zone is required outside the bounds of the symbol . There are 32 sizes in all with user-selected amounts of Reed-Solomon error encoding from 5% to 95% of data region. The recommended level is 23% of symbol capacity plus 3 codewords.

All 8-bit values can be encoded. Values 0 - 127 are interpreted as the ASCII character set while values 128 - 255 are interpreted as ISO 8859-1, Latin Alphabet No. 1. Two non-data characters can be encoded, FNC1 for compatibility with some existing applications and ECI escape sequences for the standardized encoding of message interpretation information.

Specifications:

Character Set

a) All 8-bit values can be encoded. The default interpretation shall be:

(1) for values 0 - 127, ABSI X3.4 (i.e., ASCII) and

(2) for values 128 - 255, ISO 8859-1: Latin Alphabet No. 1.

This corresponds to ECI 000003.

Two non-data characters can be encoded, FNC1 for compatibility with some existing applications and ECI escape sequence for the standardized encoding of message interpretation information.

Representation of Data

A dark module is a binary one (1) and a light module is a binary zero (0).

Symbol Size

a) The smallest Aztec Code symbol is 15x15 modules square, and the largest is 151x 151.

b) No quiet zone is required outside the bounds of the symbol.

c) Data capacity (at recommended error correction level):

1. The smallest Aztec Code symbol encodes up to 13 numeric or 12 alphanumeric characters or bytes of data.

2. The largest symbol encodes up to 3832 numeric or 3067 alphabetic character or 1914 bytes of data.

Selectable Error Correction

a) User-selectable, from 5% to 95% of data region

b) Recommended level is 23% of symbol capacity plus codewords.

Code Type

Matrix

Orientation Independent

Yes

Aztec Mesa

History and Overview

Aztec Mesas, also referred to as Mesas, are a 2D matrix form of supplemental field used to form "composite" bar code symbols, wherein a linear primary symbol is augmented by an attached 2D data field. An Aztec Mesa is a graphical rearrangement of an Aztec Code symbol into layers of modules lying above, and possibly also below, the linear host symbol. The entire symbol is referred to as an Aztec Mesa composite.

Mesas can encode from small to large amounts of data with user-selected percentages of error correction. The linear host symbol may be one of several established linear symbologies, and it performs the role of finder, horizontal metric, and orientation for the attached Mesa as well as encoding primary "license plate" data that is conventionally scannable. The Aztec Mesa field includes a Mode Message, reference ladders, and an error corrected sequence of codewords that closely follow the ISS-Aztec Code model. The supplemental message that an Aztec Mesa encodes is readable only by an image reader.

Specifications:

Character Set

All 8-bit values can be encoded. The default interpretation shall be (a) for values 0 to 127, ANSI X3.4 (i.e., ASCII) and (b) for values 128 to 255, ISO 8859-1: Latin Alphabet No. 1. This corresponds to ECI 000003.

Two non-data characters can be encoded, FNC1 for compatibility with some applications and an ECI escape character for the standardized encoding of message interpretation information.

Representation of Data

nominally 2X high by 1X wide modules, with a dark module representing a binary one and a light module representing a binary zero.

Symbol Size

The width of an Aztec Mesa is approximately the length of its linear host symbol less quiet zones.

The shortest Aztec Mesa supplement is 2 modules (4X) high, and the tallest is 64 modules (128X) high, in addition to the height of the linear host symbol.

No quiet zone is required on either side of an Aztec Mesa (though quiet zone requirements of the host symbol must be satisfied). A 1X quiet zone is required above the upper 2D field, and below the lower 2D field if present, which comprise the Aztec Mesa.

Data Capacity

(supplementing a 10-digit Code 128 symbol at recommended error correction level):

The smallest 1-layer Aztec Mesa encodes up to 18 numeric or 15 alphabetic characters or 8 bytes of data.

The largest 32-layer Aztec Mesa encodes up to 953 numeric or 764 alphabetic characters or 474 bytes of data.

Wider host symbols support Mesas with larger capacities. The absolute maximum Mesa capacity is 3070 numeric or 2457 alphabetic characters or 1533 bytes of data, and it requires a host symbol about 500X wide (e.g., 84-digit Code 128).

Selectable Error Correction

Recommended level is 23% of Mesa capacity plus 3 codewords

User-selectable, from 5% to 95% of Mesa capacity

Code Type

Matrix

Orientation Independent

Yes

Additional Features

a. Choice of Host Symbology: Aztec Mesas may be attached to Code 128, Code 39, Code 93 and 93i, Interleaved 2/5, and UPC-A/EAN-13 host symbols. Printers or readers may support only a subset of these host symbologies.

b. Two Graphical Configurations, one-sided or two-sided: The layers of data for an Aztec Mesa may either be attached all on top of its host symbol or divided between the top and bottom. The two-sided configuration is preferred for larger messages because it locates the linear "finder" in the middle of the symbol.

c. Suppression of Primary Message: A host-encoded primary message consisting of all zeros is suppressed in the output, allowing an Aztec Mesa composite to function as an ordinary high-capacity 2D symbol.

d. Extended Channel Interpretation: The ECI protocol enables characters from various character sets (e.g. Arabic, Cyrillic, Greek, Hebrew) and other data interpretations or industry-specific requirements to be represented.

e. Structured Append: Structured Append allows files of data to be represented logically and continually in up to 26 Aztec Mesas. The symbols may be scanned in any sequence to enable the original data to be correctly reconstructed.

f. Reader Configuration Symbols: A distinct format of Aztec Mesa symbol is available for use in bar code menus for reader configuration. The encoded message in these special symbols is never passed on to an application

Examples

CODABLOCK

History and Overview

CODABLOCK was developed as a stacked version of the standard bar codes Code 39 and Code 128 able to encode the information context when the label is not wide enough and therefore several shorter bar codes should be printed. Each row indicator, which shows the orientation of the reading and two check characters, which guarantee the accuracy of the whole message. There are three varieties of this code.

CODABLOCK A

Based on the structure of Code 39, it can encode 1 to 61 characters with up to 22 rows (totally maximum 1,340 characters). The check digit over the whole message is calculated on Modulo 43.

CODABLOCK F

Based on the structure of Code 128, this code can contain 2 to 44 rows, with 4 to 62 characters per row (totalling maximum 2,725 characters). CODABLOCK F is used in medical areas as HIBC (Health Industry Bar Code) for things such as labeling blood plasma or implants.

CODABLOCK 256

This variety has the same structure of CODABLOCK F, but has special start and stop characters. It can consist of 2 to 44 rows, each containing 4 to 62 characters (totaling maximum 2,725 characters). Each row contains error correction, so that minor damage can be repaired.

Advantages

Increased reliability of data of one single CODABLOCK label with respect to several separate labels to encode one message. Flexibility in adapting the information to encode to a given area thanks to variable height and information density. All the reading devices on the market can be used, as the CODABLOCK is based on already existing bar code symbologies. Re-assembling each line to reproduce the complete message in the right sequence can also be achieved by means of an overhead calculation system.

Disadvantages

The stacked structure must be respected during the reading process.

Code 49

History and Overview

Code 49 was developed by David Allais in 1987 at the Intermec Corporation to fill a need to pack a lot of information into a very small symbol. It is a multiple-row, continuous, variable symbology encoding the full ASCII 128 character set. Each row is composed of 18 bars and 17 spaces. There are between two and eight adjacent rows, each divided by a separator bar. Each row contains a row number, and the last row contains information indicating how many rows there are in the symbol.

Code 49 symbols can be read with modified moving-beam laser scanners or CCD scanners. Labels can be printed by standard printing technologies. A disadvantage with Code 49 is its structure that requires a large amount of memory for encoding and decoding tables and algorithms.

Code 49 accomplishes this by using a series of bar code symbols stacked one on top of another. Each symbol can have between two and eight rows. Each row consists of a leading quiet zone; a starting pattern; four data words encoding eight characters, with the last character a row check character; a stop pattern; and a trailing quiet zone. Every row encodes the data in exactly 18 bars and 17 spaces, and each row is separated by a one-module high separator bar.

The code is a continuous, variable-length symbology that can encode the complete ASCII 128-character set. Its structure is actually a cross between UPC and Code 39. Intermec has put the code in the public domain.

The minimum value of the x-dimension is 7.5 mils for a symbol to be read by an unknown reader. Assuming an x-dimension of 7.5 mils, and a minimum 8 row symbol height of .5475 inches, the maximum theoretical density is 170 alphanumeric characters per square inch. For a health industry symbol with a flag character, a 10-digit NDC number, a 5-digit expiration date, and a 10-character alphanumeric lot code, the symbol would be .3 inches by .53 inches. A 15-digit printed circuit board serial number Code 49 symbol would be only .1 inches by .3 inches.

Specifications:

Character Set

All 128 ASCII characters, 3 function characters, 3 shift characters

Symbol Length

70 modules, excluding Quiet Zone

Symbol Height

2 to 8 rows

Maximum Message Length

49 alphanumeric characters or 81 digits

Check Characters

1 per row, plus 4 or 6 per symbol

Net Data Density

Maximum of 93.3 alphanumeric characters per inch or 154.3 numeric digits per inch when printed using a 7.5 mil X dimension.

Other Features

Concatenation ability, Rows may be scanned in any order.

DataMatrix

History and Overview

The public domain code DataMatrix was developed by International Data Matrix (now CiMatrix). DataMatrix is a variable size 2D matrix symbology containing dark and light square data modules. It has a finder pattern of two solid lines and two alternating dark and light lines on the perimeter of the symbol for symbol identification, orientation and cell location. DataMatrix is designed with a fixed level of error correction capability. It supports industry standard escape sequences to define international code pages and special encodation schemes. DataMatrix is used for small item marking applications using a wide variety of printing and marking technologies. The symbol can contain from 1 to 2000 characters of information. It is also scalable between a 1-mil square to a 14-inch square. As an example of density, 500 numeric only characters can be encoded in a 1-inch square using a 24-pin dot matrix printer. It is capable of encoding a number of different character sets, including all 128 ASCII characters.

The most popular application for this symbology is the marking of small items such as integrated circuits, printed circuits boards, surgical instruments, lens identification and other items. The DataMatrix code can be read by CCD video cameras or CCD scanners, but it cannot be read by using a laser scanner or ordinary linear barcode scanner.

Data Matrix from CiMatrix is a 2-D matrix code designed to pack a lot of information in a very small space. A Data Matrix symbol can store between one

and 500 characters. The symbol is also scalable between a 1-mil square to a 14-inch square. That means that a Data Matrix symbol has a maximum theoretical density of 500 million characters to the inch! The practical density will, of course, be limited by the resolution of the printing and reading technology used.

The code has several other interesting features. Since the information is encoded by absolute dot position rather relative dot position, it is not as susceptible to printing defects as is traditional bar code. The coding scheme has a high level of redundancy with the data "scattered" throughout the symbol. According to the company, this allows the symbol to be read correctly even if part of it is missing. Each Datacode symbol has two adjacent sides printed as solid bars, while the remaining adjacent sides are printed as a series of equally spaced square dots. These patterns are used to indicate both orientation and printing density of the symbol.

Two main subsets of Datamatrix symbols exists. Those using convolutional coding for error correction which were used for most of the initial installations of Datamatrix systems, these versions are referenced as ECC-000 to ECC-140. The second subset is referenced ECC-200 and uses Reed-Solomon error correction techniques. ECC-000 to 140 symbols all have an odd number of modules along each square side. ECC-200 symbols have an even number of modules on each side. Maximum data capacity of an ECC-200 symbol is 3116 numeric digits, or 2335 alpha numeric characters, in a symbol 144 modules square.

The most popular applications for Datamatrix is the marking of small items such as integrated circuits and printed circuit boards. These applications make use of the code’s ability to encode approximately fifty characters of data in a symbol 2 or 3mm square and the fact that the code can be read with only a 20 percent contrast ratio.

The code is read by CCD video camera or CCD scanner. Symbols between one-eight inch square to seven inches square can be read at distances ranging from contact to 36 inches away. Typical reading rates are 5 symbols per second.

Specifications

Character Set

All ASCII Characters, All ISO Characters, All EBCDIC Characters

Code Type

Two-Dimensional Matrix

Symbol Size

Data dependent

Data Capacity

1 to 2000 Characters

Symbol Error Detection

16-bit or 32-bit Cyclic Redundancy Check

Symbol Error Correction

Convolutional Code Algorithms

EAN/UCC Composite

History and Overview

An EAN.UCC Composite symbol consists of a linear component (encoding the item's primary identification) associated with an adjacent 2D Composite Component (encoding supplementary data, such as a batch number or expiration date). The Composite symbol always includes a linear component so that the primary identification is readable by all scanning technologies, and so that 2D imagers can use the linear component as a finder pattern for the adjacent 2D Composite Component. The Composite symbol always includes a multi-row 2D Composite Component, for compatibility with linear- and area-CCD scanners, and with linear and rastering laser scanners. An EAN.UCC Composite symbol consists of a linear component associated with an adjacent 2D Composite Component.

Specifications:

Character Set

Both linear and 2D Composite Components encode a subset of ISO 646, consisting of the upper and lowercase letters, digits, and 21 selected punctuation characters.

The EAN.UCC function character FNC1 and a Symbol Separator character.

Character Structure

different edge to similar edge decodable symbol characters are used, in accordance with the selected Linear and 2D Composite Components of the symbol.

Code Type

Linear component: continuous, linear bar code symbology

2D Composite Component

continuous, multi-row bar code symbology

Maximum Numeric Data Capacity

(including implied application identifiers and calculated check digits where appropriate, but not including any encoded FNC1 characters):

Linear component:

UCC/EAN-128: up to 48 digits

EAN/UPC: 8 or 13 digits

RSS Expanded: up to 74 digits

Other RSS: 16 digits

2D Composite Component:

CC-A: up to 56 digits

CC-B: up to 338 digits

CC-C: up to 2 361 digits

Error Detection and Correction

Linear component: one check character for error detection

2D Composite Component: a fixed or variable number of Reed-Solomon error correction codewords, depending upon the specific 2D Composite Component.

Character Self-checking

Yes

Bi-directionally Decodable

Yes

Additional Features

Data compaction: The 2D Composite Components utilize a bit-oriented compaction mode, designed to encode efficiently data using application identifiers.

Component linkage: the 2D Composite Component of each EAN.UCC Composite symbol contains a linkage flag, which indicates to the reader that no data shall be transmitted unless the associated linear component is also scanned and decoded. All linear components except EAN/UPC also contain an explicit linkage flag.

UCC/EAN-128 emulation: Readers set to the UCC/EAN-128 emulation mode transmit the data encoded within the Composite symbol as if the data were encoded in one or more UCC/EAN-128 symbols.

Composite Component escape mechanism: a mechanism to support future applications which require data content beyond the ISO 646 subset encodable in the standard form of the EAN.UCC Composite Symbology.

Examples

MaxiCode

History and Overview

A fixed-sized 2D matrix symbology, MaxiCode (originally called UPS Code), was developed by United Parcel Service. This public domain code is made up of offset rows of hexagonal elements arranged around a central, bulls-eye finder pattern. Hexagonal elements allow dense packing, and provide fixed center-to-center spacing of all elements. The central finder pattern and fixed symbol size allow for easy scanning on high-speed conveyors.

MaxiCode is made up of 1- inch by 1-inch array of 866 interlocking hexagons. This allows the code to be at least 15% denser than a square dot code, but requires higher resolution printers (thermal direct/transfer or laser) to print it. A central bulls-eye allows a scanner to locate the label regardless of orientation.

ASCII data is encoded in six-bit symbol characters. There are five different code sets. A single MaxiCode symbol can encode up to 144 characters of data, provides two levels of Reed-Solomon error correction and can be read when up to 25% of the symbol is destroyed. MaxiCode can be read by CCD camera or scanners.

Approximately 100 ASCII characters can be held in the 1-inch square symbol. The symbol can still be read even when up to 25 percent of the symbol has been destroyed and can be read by CCD camera or scanner.

Specifications:

Character Set

All 256 ASCII Characters

Symbol Size

1.11 inch x 1.054 inch nominal (including Quiet Zone)

Nominal Element Size

0.035 inch x 0.041 inch hexagon

Maximum Data Capacity

93 characters

Check Characters

Two selectable levels of Reed Solomon error correction

Data Sequence

Printer specific. See printer notes for more details.

Other Features

Omni-directionallly scannable and Concatenation capability.

Micro PDF417

MicroPDF417 is derived from PDF417. The code has a limited set of symbol sizes and a fixed level of error correction for each symbol size. Module dimensions are user-specified so that the symbol may be printed with a variety of printers. The symbology allows up to 150 bytes, 250 alphanumeric characters, or 366 numeric digits to be stored. This is done by specifying one of three compaction modes: data, text or numeric. Text Compaction mode permits all printable ASCII characters to be encoded (values 32 to 126 inclusive) as well as

selected control characters. Byte Compaction mode permits all 256 possible 8-bit byte values to be encoded. This includes all ASCII characters value 0 to 127 inclusive and provides for international character set support

MicroPDF417 is designed for applications where the symbol must be smaller than PDF417 will allow.

PDF417

History and Overview

PDF417 is a two-dimensional, stacked, public-domain barcode developed in 1990 by Symbol Technology. It is a multi-row, continuous, variable length symbology that has high data capacity of storing up to about 1,800 printable ASCII characters or 1,100 binary character per symbol. The symbol is rectangular. Its shape can be adjusted to some extent by setting the width and allowing the height to grow with the data. It is also possible to break large amounts of data into several PDF417 symbols that can be logically linked.

Each symbol has between 3 and 90 rows. Each row contains a start pattern, a left row indicator, from 1 to 30 data characters, a right row indicator, and a stop pattern. Both the number of rows and their length are selectable, allowing the aspect ratio to be adjusted to particular labeling applications. There are no separator bars between rows.

Each symbol character consists of 4 bars and 4 spaces in a 17-module structure. There are three mutually exclusive sets of symbol patterns, or "clusters." Each cluster has 929 distinct patterns. Adjacent rows use different clusters, so it is possible for the decoder to tell if the scanning path is crossing row boundaries without the use of separator bars.

Every symbol includes at least two error-correction codewords. An option permits up to 510 additional error-correction codewords to be added to the symbol. There are three different data compaction modes that define the mapping between codeword values and decoded data.

PDF417 supports industry standard escape sequences to define international code pages and special encodation schemes. The capacity of PDF417 can be helpful in applications where the data must travel with the label item, where a host database is not always available for quick look-up. PDF417 is being used for hazardous materials labeling; storing technical specifications and calibration data on electronic instruments; encoding fingerprints and photographs on the back of drivers' licenses.

PDF417 symbols require a 2D scanner; they cannot be read using an ordinary linear barcode scanner. A number of scanners are on the market using both laser and CCD camera technologies. PDF417 symbologies can be printed using most laser printers or label printers on the market.

Specifications:

Character Set

All 128 ASCII Characters, All 128 Extended ASCII Characters, 8-bit Binary Data, Up to 811,800 Different Interpretations

Symbol Height

3 to 90 Rows, Maximum Row Height is 3X

Symbol Width

90X to 583X

Error Correction Characters

2 to 512

Maximum Data Capacity

1850 Text Characters (at error corrections level 0) 2710 digits, 1108 bytes

Other Features

Designed so that cross-row scans can be successfully used. Selectable levels of error correction.

Options

Concatenation, Global Label Identifiers, Truncated PDF417

QR Code

History and Overview

Denso of Japan developed QR Code (Quick Response Code) as a 2-D matrix symbology having position detection patterns on its three corners. QR Code features mass data capacity, high data density and error correction ability, ultra high speed, omni-directional reading and Japanese Kana-Kanji representation.

QR Code is in the public domain and it is read by using CCD array cameras and image-processing technology because of the layout of the finder pattern.

QR Code symbols are square in shape and can easily be identified by their finder pattern of nested alternating dark and light squares at three corners of the symbol. Maximum symbol size is 177 modules square, capable of encoding 7366 numeric characters, or 4464 alpha numeric characters. One important feature of the symbology is its ability to encode directly Japanese Kanji and Kana characters. QR Code is designed for rapid reading using CCD array cameras and image processing technology because of the layout of the finder pattern.

Specifications:

Models

Mode 1: original version

Mode 2: enhanced version

Character Set

1) numeric data (digits 0 - 9)

2) alphanumeric data (digits 0 - 9; upper case letters A - Z; nine other characters: space, $%*+-./:)

3) 8-bit data (JIS 8-bit character set (Latin and Kana) in accordance with JIS X 0201)

4) Kanji characters (Shift JIS value 8140HEX-9FFCHEX and E040HEX-EAA4HEX. These are values shifted from those of JIS X 0208. Refer to JIS X 0208 Annex 1 Shifted Coded Representation for detail.).

Representation of Data

A dark module is a binary one and a light module is a binary zero.

Symbol Size

(not including quiet zone)

Model 1: 21 x 21 modules to 73 x 73 modules (Versions 1 to 14, increasing in steps of 4 modules per side)

Model 2: 21 x 21 modules to 177 x 177 modules (Versions 1 to 40, increasing in steps of 4 modules per side).

Data Characters per Symbol

(for maximum symbol size)

Model 1: (Version 14-L)

Model 2 (Version 40-L)

1) numeric data: 1,167 characters, 7,089 characters

2) alphanumeric data: 707 characters, 4,296 characters

3) 8-bit byte data: 486 characters, 2,953 characters

4) Kanji data: 299 characters, 1,817 characters

Selectable Error Correction

Four levels of Reed-Solomon error correction allowing recovery of:

L 7%

M 15%

Q 25%

H 30%

Of the symbol codewords.

Code Type

Matrix

Orientation Independence

Yes

SuperCode

History and Overview

SuperCode is a packet bar code symbology, a variant of a multi-row symbology. There are precise rules for the horizontal placement of symbol characters in a packet, but greater freedom in placing packets vertically and horizontally than offered by a matrix of columns and rows in a multi-row symbology.

Specifications:

Character Set

1. Values 0-127 in accordance with ANSI X3.4, i.e. all 128 ASCII characters (equivalent to the US national version of ISO 646).

2. Values 128-255 in accordance with ISO 8859-1: Latin Alphabet No. 1.

NOTE: This corresponds to ECI 000003.

Character Structure

n,k,m symbology of 16 modules (n), 4 bar elements (k), with the largest element 6 modules wide (m).

Maximum Number of Data Characters

per symbol (at the lowest level of error correction):

1. Alphanumeric data: 4,083 characters

2. 8-bit byte data: 2,546 characters

3. Numeric data: 5,102 digits

Symbol Size

1. Number of packets: 3 to 1023

2. Maximum codeword capacity: 1023 per single block 2046 per double block

3. Maximum data codeword capacity: 2044 including Symbol Structure Header

Selectable Error Correction

32 levels of error correction requiring 2 to 1056 error correcting codewords per symbol.

Non-data Overhead

1. Per packet: 1 address codeword

2. Per row: 6 modules for start pattern, 3 modules for stop pattern, 20 modules for quiet zone: a total of 29 modules

3. Per symbol: 2.4 codewords for header plus error correction codeword

Code Type

Continuous

Character Self-checking

Yes

Bi-directionally Decodable

Yes

Additional Features

The following summary is of additional features which are inherent or optional in SuperCode:

a. Packet Structure: (Inherent) The packet structure of SuperCode ensures that each symbol character encoding a data or error correction codeword is adjacent to a symbol character encoding the packet address. Thus the sequence of codewords is known no matter how spatially arranged are the packets. Not only does this allow for non-rectangular symbol shapes, but the packets do not have to abut one another physically.

b. Error Correction: (Inherent) SuperCode symbols have error correction codewords, based on Reed-Solomon error correction algorithms, which can be used not only to detect errors but to correct erroneously decoded or missing codewords (see). A user may select one of 32 error correction levels.

c. Extended Channel Interpretations (ECI): (Optional) This mechanism enables characters from other character sets (eg Arabic, Cyrillic, Greek, Hebrew) and other data interpretations or industry-specific requirements to be represented (see).

d. Logical Layer Designator (LLD): (Inherent) This mechanism allows various structures of the symbol. Five Logical Layer Designators are specified (see). One LLD is allocated to the ECI scheme, common to a number of symbologies.

Composite

Composite Bar Code

The Composite Symbology, incorporates a linear component with a two-dimensional composite component, this helps address supply chain applications not being met currently. It will allow for the co-existence of symbologies already being used and can be supported by both laser - and imaging based scanning equipment. By using a linear component as a finder pattern for the 2D composite component, scanning performance can be enhanced.

NOTE: Use a pipe symbol '|' to separate the linear data from the 2D data when creating Composite Bar Codes in the Software

An EAN.UCC Composite symbol consists of a linear component (encoding the item's primary identification) associated with an adjacent 2D Composite Component (encoding supplementary data, such as a batch number or expiration date). The Composite symbol always includes a linear component so that the primary identification is readable by all scanning technologies, and so that 2D imagers can use the linear component as a finder pattern for the adjacent 2D Composite Component. The Composite symbol always includes a multi-row 2D Composite Component, for compatibility with linear- and area-CCD scanners, and with linear and rastering laser scanners.

GS1 DataBar

Formally known as RSS (Reduced Space Symbology)

GS1 DataBar	GS1 DataBar Truncated
GS1 DataBar Stacked	GS1 DataBar Stacked Omnidirectional
GS1 DataBar Limited	GS1 DataBar Expanded
GS1 DataBar Expanded Stacked	

GS1 DataBar

Description

Formally known as RSS-14.

There are 17 characters in a *GS1 DataBar* that make up the linear barcode, but only 13 are entered data. There is a mandatory Application Identifier of 01 that is not part of the entered data. The first character after the Application Identifier is the linkage flag. The linkage flag determines whether there is a Composite 2D barcode associated with the linear barcode. The linkage flag will either be a 1

(true) or 0 (false). This character is not included in the entered data and will not appear in the scan.

The next 14 digits will be the entered 13 characters plus a check digit that is calculated by the software. If less than 13 characters are entered, zeros will be padded in the data after the linkage character to make up the correct amount of characters.

Instructions

Thirteen digits must be entered for the linear *GS1 DataBar*. If thirteen digits are not entered, leading zeros will be added.

When creating a composite barcode, a pipe symbol (|) must be used when separating the data between the linear and 2D barcodes.

Example

Using the data 2001234567890 will create a linear Standard *GS1 DataBar* with a human readable of (01)20012345678909. The 01 is the Application Identifier and the last digit is the check digit.

(01)20012345678909

When creating a composite barcode, the data such as 2001324567890|0123456789, 0120012345678909 will be encoded in the linear part of the barcode and 0123456789 will be encoded in the 2D portion of the composite barcode.

(01)20012345678909

GS1 DataBar Truncated

Description

Formally known as RSS-14 Truncated.

The *GS1 DataBar Truncated* barcode is used when size, specifically height might be an issue. The height of the barcode is set to the GS1 standard of 13

times the X dimension (the x dimension is the width of the narrow bar element). There are 17 characters in a *GS1 DataBar Truncated* that make up the linear barcode, but only 13 are entered data. There is a mandatory Application Identifier of 01 that is not part of the entered data. The first character after the Application Identifier is the linkage flag. The linkage flag determines whether there is a Composite 2D barcode associated with the linear barcode. The linkage flag will either be a 1 (true) or 0 (false). This character is not included in the entered data and will not appear in the scan.

The next 14 digits will be the entered 13 characters plus a check digit that is calculated by the software. If less than 13 characters are entered, zeros will be padded in the data after the linkage character to make up the correct amount of characters.

Instructions

Thirteen digits must be entered for a linear *GS1 DataBar Truncated*. If the thirteen digits are not entered, leading zeros will be added.

When creating a composite barcode, a pipe symbol (|) must be used when separating the data between the linear and 2D barcodes.

Example

A linear barcode with an X dimension of .010 (0.25mm) would be 0.13 (3.25mm) high.

Using the data 0001234567890 will create a linear *GS1 DataBar Truncated* with a human readable of (01)00012345678905. The 01 is the Application Identifier and the last 5 is the check digit.

(01)00012345678905

When creating a composite barcode, data such as 1101006414909|372772892887166266377488 the 0111010064149094 will be encoded in the linear part of the barcode and 372772892887166266377488 will be in the 2D portion of the composite barcode.

GS1 DataBar Stacked

Description

Formally known as RSS Stacked.

The *GS1 DataBar Stacked* barcode is used when width might be an issue. The data is split in half and encoded as a split level barcode. The height of the upper part of the barcode is 5 times the X dimension. The height of the lower part of the barcode is 7 times the X dimension. The separator pattern between the upper and lower part of the barcode contains no data. The *GS1 DataBar Stacked* barcode uses a 01 Data Identifier. It also uses a linkage flag which would be 0 (false) or 1 (true). A 1 is used only if the barcode has a 2D barcode attached to the linear barcode. Neither the Data Identifier nor the linkage flag needs to be entered by the user as part of the data. The linkage flag will not appear in the scan. There are 17 characters in a *GS1 DataBar Stacked* that make up the linear barcode, but only 13 digits are entered data plus a check digit that is calculated by the software.

Instructions

Thirteen digits must be entered for a *GS1 DataBar Stacked*. If thirteen digits are not entered, padded leading zeros will be added.

When creating a composite barcode, a pipe symbol (|) must be used when separating the data between the linear and 2D barcodes.

Example

Using the data 0001234567890 will create a linear *GS1 DataBar Stacked* with a human readable of (01)00012345678909. The 01 is the Application Identifier and the last 9 is the check digit.

(01)00012345678905

When creating a composite barcode, data entered as 0341234567890|17010200 the 0103412345678900 will be encoded in the linear part of the barcode and 17010200 will be in the 2D portion of the composite barcode.

(01)03412345678900(17)010200

GS1 DataBar Stacked Omnidirectional

Description

Formally known as RSS Stacked Omnidirectional.

The *GS1 DataBar Stacked Omni-directional* barcode is used when width might be an issue. The data is split in half and encoded as a split level barcode. The height of the upper part of the barcode is 5 times the X dimension. The height of the lower part of the barcode is 7 times the X dimension. The separator pattern between the upper and lower part of the barcode contains no data. The *GS1 DataBar Stacked Omni-directional* barcode uses a 01 Data Identifier. It also uses a linkage flag which would be 0 (false) or 1 (true). A 1 is used only if the barcode has a 2D barcode attached to the linear barcode. Neither the Data Identifier nor the linkage flag needs to be entered by the user as part of the data. The linkage flag will not appear in the scan. There are 17 characters in a *GS1 DataBar Stacked Omni-directional* that make up the linear barcode, but only 13 digits are entered data plus a check digit that is calculated by the software.

Instructions

Thirteen digits must be entered for the linear *GS1 DataBar Stacked Omni-directional*. If thirteen digits are not entered, leading zeros will be added.

When creating a composite barcode, a pipe symbol (|) needs to be inserted between the data that will be in the linear barcode and the 2D barcode.

Example

Using the data 0003456789012 will create a linear *GS1 DataBar Stacked Omni-directional* with a human readable of (01)00034567890125. The 01 is the Application Identifier and the last 5 is the check digit.

(01)00034567890125

When creating a composite barcode, data entered as 0341234567890|17010200 the 0103412345678900 will be encoded in the linear part of the barcode and 17010200 will be in the 2D portion of the composite barcode.

(01)03412345678900(17)010200

GS1 DataBar Limited

Description

Formally known as RSS Limited.

The *GS1 DataBar Limited* barcode is designed for small, items. It uses a 01 Data Identifier. It also uses a linkage flag which would be 0 (false) or 1 (true). A 1 is used only if the barcode has a 2D barcode attached to the linear barcode. Neither the Data Identifier nor the linkage flag needs to be entered by the user as part of the data. The linkage flag will not appear in the scan. There are 17 characters in a *GS1 DataBar Limited* that make up the linear barcode, but only 13 digits are entered data plus a check digit that is calculated by the software.

Instructions

Thirteen digits must be entered for the linear *GS1 DataBar Limited*. If thirteen digits are not entered, leading zeros will be added.

When creating a composite barcode, a pipe symbol (|) needs to be inserted between the data that will be in the linear barcode and the 2D barcode.

Example

Using the data 1501234567890 will create a standard *GS1 DataBar Limited* with a human readable of (01)15012345678907. The 01 is the Application Identifier and the last 7 is the check digit.

(01)15012345678907

When creating a composite barcode, data such as 0351234567890|21abcdefghijklmnopqrstuv the 0103512345678907 will be encoded in the linear part of the barcode and 21abcdefghijklmnopqrstuv will be in the 2D portion of the composite barcode.

(01)03512345678907

GS1 DataBar Expanded / Expanded Stacked

Description

Formally known as RSS Expanded/Expanded Stacked.

The *GS1 DataBar Expanded* barcode is a variable length symbology capable of encoding up to 74 numeric or 41 alpha characters. This symbology does allow for a Data Identifier.

Instructions

All Data Identifiers must be added manually when using the Expanded symbology. When creating a composite barcode, a pipe symbol (|) must be used when separating the data between the linear and 2D barcodes.

Using a value of 4 or less in the Segments per Row, an Expanded Stacked barcode will be created.

Example

Using the data 01906141410000153202000150 will create a linear *GS1 DataBar Expanded* with a human readable of 01906141410000153202000150. The 01 is the Application Identifier.

(01)90614141000015(3202)000150

Expanded Stacked

(01)90614141000015(3202)000150

When creating a composite barcode, data entered as 0193712345678901|3103001234911A2B3C4D5E the 019371234567890 will be encoded in the linear part of the barcode and 3103001234911A2B3C4D5E will be in the 2D portion of the composite barcode.

(01)93712345678904(3103)001234

(91)1A2B3C4D5E

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Appendices

Appendix A: Error Status Messages

Choose the letter that the error message begins with below:

A C D E F G I M N P Q R S T U

A

At least 1 printer must remain defined - You have tried to Delete the ONLY printer that is defined.

C

Cannot change active or completed job

Cannot change config while jobs are in print queue

Cannot complete requested operation - insufficient memory available

Cannot create - please specify another name

Cannot create field

Cannot UNDO previous change - no action taken

D

Duplicated Keyword - There is a duplicate keyword in the command file.

E

Enter a Valid Field Length - A field length of 0 or a field length greater than 255 was entered.

Erase error

Error reading file

Error Occurred Saving Print Queue

Error writing file - disk may be out of space

Expecting Keyword Directive or Field Name - Check the command file to be sure that all phrases or fields are correct

F

Field is too small - not changed

Field is too small - not created

Field Length is Too Large - The field length is greater than 255.

Field Length is Too Small - The field length is zero.

Format request list is full - Cannot add this job

Format Saved With DEMO Version - Cannot do production print - Cannot do a production print of a format that was saved using the DEMO version.

G

General Protection Fault (GPF)/Application Error - An error has occurred with the application. Contact your reseller if any such error occurs. You will need to contact your reseller AFTER recording the information and printing it out.

General Protection Faults can be recorded while running a utility program called DR. WATSON. Dr. Watson is provided with Windows 98 and higher. If a system error occurs, Dr. Watson creates a special file called DRWATSON.LOG. Dr. Watson will prompt you for details about the circumstances under which the application error occurred. After recording the information, it is recommended that you exit Windows, then restart Windows and the application. You can print the contents of the .LOG file and send the results to your reseller. Some General Protection Faults are not reproducible, therefore, it is also recommended that you have DR. WATSON running in the background while you are working with the software or any other application. The location of Dr. Watson can be different depending on what version of Windows you are using: For Example under Windows 98 Dr. Watson is located in the Windows subdirectory but Dr. Watson is located in the Windows\System32 subdirectory when using Windows XP.

To have Dr. Watson running each time Windows is started:

Copy Dr. Watson into the **Windows | Start Menu | Programs | Start Up** folder.

I

Incorrect User ID - The USER ID was entered incorrectly. Check the proper user identification spelling and re-enter.

Incorrect Password - The PASSWORD was entered incorrectly. Check the proper password spelling and re-enter.

Ineligible Field Name Used - Attempt to use a field name not listed.

Initialization error

Insufficient memory

Invalid Character in Field Name - An invalid character was entered in a field name.

Invalid Command Line Option - Check that the Command Line was typed correctly, then try again.

Invalid Operand In Clause - An invalid operand was specified in a clause in the command file.

Invalid Field Length - Contains decimal point.

M

Matching database record cannot be found.

Missing entry.

Missing or Invalid Configuration File - Probable Cause: LABEL.CFG is not in the same directory as EASY.EXE or file is bad - copy file to proper directory or copy file from backup disk. Cannot proceed with execution of the software.

N

Name already exists - please choose another name.

No existing files

No Fields Specified - No fields specified for an index value.

No printer modules found

No Valid Format Name Found - A valid format name was not found in the command file.

Non-alphabetic characters in field

Non-alphanumeric characters in field

Non-numeric characters in field

Not a valid file or directory name

Not an existing file in directory

P

Picture Error - Cannot read picture or picture too large. Probable Cause: The specified picture file cannot be found or the size of the picture is too large for the printer.

Please enter a name that has not already been used

Please enter a valid number

Please enter valid data

Q

Queue Error - Error loading job in queue or cannot read queue file. Probable Cause: A .job file cannot be found while restoring the Print Queue.

R

Rename failed

S

Software Key Not Responding - The Software Key may be missing/defective or you may not have the Software Key device drivers installed. Please download the drivers from out website www.tharo.com and install them.

This condition can be caused by a bad connection to the PC, no Software Key drivers installed or a Software Key failure. Please press F3 for help in diagnosing the problem.

Starting Job Number Not Found in Command File - A starting record number, specified on the command line, was not found in the associated command file.

Syntax Error in Index Expression - An invalid operation in an index expression.

T

The Format Request List is Full. Cannot Add This Job - Cause: EASYLABEL folder is write protected or 220 jobs in Queue - allow jobs to run and add job later.

The name is reserved - please enter another field name.

The total field height is too large - please change

The total field width is too large - please change

There is no data required for this format

Too large - please reenter

Too small - please reenter

Type Mismatch in Index Expression

U

Unable to find file

Unable to load module

Unbalanced Quote - A phrase in the command file is missing a quote.

Undefined Field Name Used - Attempt to use a field name that is not defined.

Any error message that is not included in the list above indicates an internal program failure. Please report any such error to your Reseller.

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Appendix B: Application Notes

Sell By Date	Formats Printed Report	The Save As Function
Uploading of Report Files	Advanced Database Functions	TRUEDATE - TRUETIME
	TRUECOUNT	

Sell By Date

Sell by Date can be created on the format by using one of the following 3 methods:

1) The first method will require three fields, of which the first two may be phantom fields.

Field One, has as its "Source of Date": Print Date. Choose under "Special Formatting": 1 - Short Date (10-Jan-93) or 3 Julian Date (93010).

Field Two, is the numeric amount, that when added to Field One will give the 'Sell by Date.'

Field Three, printed on the format, should have as its "Source of Data": Arithmetic (add and subtract only). Also, again, under "Special Formatting" for printing choose: 1 - Short Date or 3 - Julian Date. To have a date printed in any other format, such as European format, select option 4 - Custom Date. You will then need to enter the character string for the format you wish.

2) The second method requires only one field.

The field must have a "Source of Data" as 'Arithmetic'. For the screen item 'Calculation', enter an arithmetic expression using the keyword 'DATE'. The keyword, DATE represents the system date and can be used to calculate a Sell By date. For more information see Arithmetic Source of Data.

3) The third method also requires only one field

Create a field with a "Source of Data" as 'Print Date'. Then enter a non zero number into the Year Offset, Month Offset or Day Offset fields to add Years, Months, or Days to the current date.

NOTE: European Date can also be printed by changing the International Settings under your Windows Control Panel. Refer to your Microsoft Windows User's Guide for additional information. If International settings are changed, you need to exit Windows, then restart. All dates will be printed in the new format.

Formats Printed Report

Many manufacturers of food or pharmaceuticals are mandated by the Federal Government to account for their printed labels. The format printed reports will give you an on-going log that will allow you to meet these requirements. It can also be used to control your label inventory for reordering purposes. Be aware that since the report is written when the formats first start to print, the report will be in error if the print run is stopped before all formats have had a chance to print.

The Save As Function

There are many ways to input your variable data into the software. You may have an operator answer prompted questions at the time of printing, you may call the information in from a file at the time of printing or you may use the save as function.

The save as function will allow you to create a format along with the variables in it and rename and save it repeatedly each time with new values for the variables. You may do this for the entire product list of your company. Therefore, the only operator action required at the time of printing would be to call in a specific format and request the appropriate quantity be printed.

Uploading of Report Files

In certain situations, it may be beneficial to transfer report files to a host system. This is accomplished with the 'write text file' function in the report section. After you have converted the report file to an ASCII text file, any communications package which allows for file transfer between PC and host will be able to send this file. A simple routine on the host system can then insert this information into your host database.

Advanced Database Functions

The advanced database functions provide the ability to embed graphics and text files specific to a database record. Refer to adding a database for more information.

Some applications require special files to be part of a specific record. Files such as graphics and multi-line text files can be defined for a specific record or for multiple records. This saves time and reduces operator error.

For example, if the database file contains chemical data and the same warning statement, first aid statement or caution statement is used for more than 1 chemical in the database, the operator can specify the required text file for each record or database field without having to key repeated information in subsequent records.

This concept is the same for graphics. Many times, the same graphic is needed for multiple chemicals. By specifying the correct graphic(s) for a specific chemical, the operator will not need to worry about printing an incorrect graphic with the incorrect chemical. By including graphics and text files with specific records, the data will be merged onto the label at print time.

Here, we will demonstrate how to include a graphic or text file in a database record.

1. The first step is to create the database with a database field that is a character data type and is big enough to include a filename and or path statement as the data. For example, to embed a text file or graphic in a database record, the database field must be a minimum length of 12. This will be enough space for an 8 character filename, and the file extension. (Ex. DIAGRAM2.PCX) the software will look for the file in the default directory. If the text file or graphic is stored in a different location, the length for the field must be long enough to include a drive designator and a path name. (Ex. C:\WINDOWS\CAUTION1.TXT).

2. Next, you will need to design the format so that the Source of Data is Database Indirect, for a text file, or Database, for a graphic. When adding the text field to the format, the Database Indirect Source of Data means that the software will look for the text at the location specified in the database record. When adding the graphic to the format, the Database Source of Data means that the software will look for the graphic file at the location specified in the database record. Please

refer to Adding a Text or Paragraph Field and Adding a Picture Field for more information.

3. Once the format is designed, the format can be printed. When printing the format, the software will merge the correct text file and graphic with the correct database information when the operator enters a value for the database search key.

TRUEDATE - TRUETIME

The TRUEDATE and TRUETIME functions force the software to send the current system date and time with each format that is sent to the printer. To use the TRUEDATE function, create a Text field with the data source of "Print Date" and use the field name TRUEDATE. To use the TRUETIME function, create a Text field with the data source of "Time" and use the field name TRUETIME.

TRUECOUNT

The TRUECOUNT function tells the software to use the value of this field for the default value for the number of batches. To use TRUECOUNT, add a text field to the format named "TRUECOUNT". The value of this field will become the default number of batches of the label to be printed in the Print Request screen.

It is also possible for batchsize to be specified in a TRUECOUNT field. The syntax is the same as for the "formatcount" command in a command file: two numbers separated by commas give the number of batches and the batchsize. For example, to print 10 batches of 2 labels per batch, use "10,2".

If you want to print the number of batches on the label instead,
use @TRUECOUNT in a copied or linked field.

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Appendix C: $ALL Function and Tutorial

Accessing Internal or External Databases

Formats may be printed accessing data from either its internal database or an external ASCII database. An example file is included with the software, store.dbf. An external ASCII database may not be viewed or modified from within this software package.

$ALL Tutorial

Printing shelf labels typically means printing out an entire data file. This can be accomplished through the $ALL command. $ALL is a wild card command that informs the software that you want to print all the records or a specific range of

records in a database. This database may be either an internally created database or an external database.

The sample files included with the software, illustrate the use of the $ALL command.

- Click the **Printer** icon or choose **File | Print Batch of Formats** from the menu bar.
- Browse to the directory where the example formats are saved on your PC and select the "STORE" format.
- The prompt that appears on your screen is "ENTER THE BAR CODE NUMBER FOR THE RECORD OR $ALL FOR ENTIRE DATABASE". Type $ALL.
- The format will appear on your screen filled in with the first record from an ASCII database named STORE.DBF.
- Select option Print a Batch of Formats to print the records and the Print Request Screen will be displayed:
- BATCH SIZE (NUMBER OF IDENTICAL COPIES OF EACH FORMAT): ENTER "1"
- STARTING RECORD NUMBER OR ALL (DATABASE HAS 30 RECORDS): ENTER "ALL"

If you typed a number instead of "ALL" you would now see the following item:

ENDING RECORD NUMBER

This would give you the ability to print a specific range of records from a data file if it were required because of a paper jam or some other situation.

The next item is :

- HOLD JOB

Answer **No** to begin printing immediately. Enter **Yes** to store this job in the Print Queue for printing later. If you answered **No**, shortly labels will start coming out of the printer. A total of 60 labels will be printed.

Now you may exit the Print screen and enter the Change Format function to explore some of the attributes of the format named STORE. One item of interest might be the bar code and how it accesses the database through the use of an operator prompt.

Once you are through exploring the format, exit the software completely. It's now time to explore the database that was used to print the labels that came off the printer.

The name of this file is STORE.DBF. It was created on a mini computer and downloaded to the PC for use with this software.

Following are the key points that may be viewed on the screen. You may also see:

- The structure of the file is fixed length fields padded with spaces and a carriage return-line feed at the end of each record. The file must have the extension .DBF.
- The first 9 lines define the structure of the file by field names and character positions. This is the header record. There may be up to 32 fields, 80 characters per field.
- There must be a blank line between the header record and first data record.
- The first 6 characters are a field called Code. This is the field that the format called STORE uses as a search field.
- FMTCOUNT is a reserved word and allows you to control the number of labels printed for each record. That is why you wound up with 60 labels even though there were only 30 records in the database. This option would be used when multiple locations are used to shelve an item.
- BARSUPP is another reserved word. This will allow you to suppress the printing of all bar codes on a particular label. This would be used to prevent attempted reordering of a discontinued item or attempted ordering of a vendor replenished item. When using BARSUPP the absence of a character means print the code. The presence of any character means suppress the code.
- The last field, called Junk, is there strictly to work around a problem with many text editors that won't allow a line to end with a space and instead insert the carriage return-line feed after the last printable character. This field would not have been needed if we had Code as our last field since Code always has 6 printable characters.
- The last bit of exploration that we will do is of a Command File. To state it simply, a Command File will allow you to do almost anything with an external file that you could do from the keyboard at the time of printing.

This function is quite useful if you are printing labels for multiple locations. Key points on ideas of how to use a Command File are:

- If you serviced 10 locations that needed price update labels you would have 10 identical Command File records.
- You could create a separator to be printed after the database had been run each time. Each one of these would be a separate Command File record.
- If you use multiple types of stock, you could use DISPLAYMSG to prompt you to change to a different stock based on the format being printed.
- If you were printing location specific replacement labels, our recommendation would be to use a location specific format that accesses

a location specific replacement database. Then, each week, copy the location specific replacement database to the one created the previous week.

- Using the ideas listed above it is completely possible to service 50 to 100 locations from one central location printing out your labels in separated and collated form by typing nothing at the PC except EASY and a Command File name.

FORMATNAME=STORE

FORMATCOUNT=ALL

BARCODE=$ALL

TESTPRINT=ON

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Appendix D: File Types

Common File Extensions

.BMP - A bit mapped picture graphic file.

.CMD - A Command File, created by an external text editor. Similar to the DOS batch file utility - used to print formats externally.

.DBF - A database file - created by the internal database, dBASE III, III+ or IV compatible or an ASCII database using the ASCII database attributes.

.EPS - An Encapsulated Postscript graphic file.

.FMT - File extension used to for label formats.

.IXL - Contains a list of index files matched to a database File.

.LOG - A User log file.

.MDB - A database file created with the Microsoft Jet Database engine.

.NDX - 7 possible per database name - file could be created after database is established.

.PCC - A picture graphic file.

.PCX - A picture graphic file.

.RPT - A report file - added during format printing - dBASE III compatible.

.SER - A serial file. The file is rewritten at the time of format printing with the next logical value when used with increment or decrement. It prevents duplicate or missing serial numbers.

.TIFF - A picture graphic file.

.WMF - A Windows MetaFile graphic.

IMPORTANT NOTE: The software can read in pictures that were created under PC Paintbrush or any other software package that is capable of creating .PCC or .PCX format files. The purpose is to take advantage of the higher resolution capabilities of this software. When using a .PCX graphic editor package or when scanning in a graphic, your best results will occur if the scanner and/or software package is set to Monochrome (also called Black and White or 2 Color). Avoid color and shades of gray as these can produce a 'cloudy' looking graphic on your label format, unless you are printing to a Color printer.

Files included in the Software

AXEVENT.LOG - A File created by the Software to help troubleshoot Active X problems

AXPRINT.DLL - The Software's Active X server

AXPRINT.TLB - The Software's Active X Type Library

BCGCB61.DLL - Toolbar Control for DATABASEVIEW

DATABASEVIEW.EXE - The Software's Database Editor

DATAMTRX.DLL - A library that contains routines used to print a Datamatrix bar code.

EASY.EXE - The main Program File.

EASYUNINST.DLL - Used when the Software is uninstalled to un-register the Active X.

ELABELINFO.OCX - The ELABELINFO Active X object

ELabelOCX.doc - A programming Guide for using the software's Active X.

ELABELOCX.LIC - The Visual Basic License file for the Software. It allows users to program using the Active X objects.

ELABELOCX.OCX - The Software's Active X objects

ENGLISH.LNG - Message file - will change according to language.

LABEL.CFG - The configuration parameters for your system. If erased, needs to be reinstalled from the program disk. The software cannot execute without LABEL.CFG.

LABELC32.DLL - Common sub-routines used by the main program and the Printer Task.

Labelcom.exe - The Labelcom Utility.

LABELD.DLL - Common sub-routines used by the main program.

LABELPA0.DLL - Printer dependent module for the Apollo printers.

LABELPC0.DLL - Printer dependent module for the TSC printers

LABELPD0.DLL - Printer dependent module for the Tharo/Datamax Printers.

LABELPF0.DLL - Printer dependent module for the Tharo/Fargo-Datamax printers.

LABELPG0.DLL - Printer dependent module for the Gemini Printer.

LABELPH0.DLL - Printer dependent module for the HP LaserJet and CF1000 printers.

LABELPI0.DLL - Printer dependent module for the Intermec printers.

LABELPK0.DLL - Printer dependent module for the Ricoh printers.

LABELPN0.DLL - Printer dependent module for the Novexx printers

LABELPP0.DLL - Printer dependent module for the PostScript printers and printer drivers supported under Microsoft Windows Control Panel. The LABELPP0.DLL library file must be installed in order to design and print labels to a printer driver delivered with Microsoft Windows or supported under the Windows Control Panel.

LABELPR0.DLL - Printer dependent module for the RJS printers.

LABELPS0.DLL - Printer dependent module for the SATO printers.

LABELPT0.DLL - Printer dependent module for the TEC printers.

LABELPX0.DLL - Printer dependent module for the Printronix printers.

LABELPZ0.DLL - Printer dependent module for the Zebra printers.

LABELT0.DLL - A library containing routines used by the Windows printer drivers to print a PDF417 bar code. This module must be present if you are printing PDF417 using a Windows Printer driver.

logreader.exe - the Log Reading Utility used to read the encrypted user logs.

QRENCODE.DLL - A library that contains routines used to print a QR Code.

README.TXT - Release Notes for the Software.

RSS14BAR.DLL - A library that contains routines used to print a RSS 14 bar code.

SftTv32.DLL - Used to create the Datasheet view in the Databaseview editor.

UNINST.ISU - The UNinstallshield information file for the uninstallation of the Software.

UTD.DLL - A utility library for the Software's Active X.

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Appendix E: Installing Code Page 850

For additional information on installing Code Page 850 in Windows 95, Windows 98, Windows 2000, Windows NT, or Windows XP please refer to the following page on our website by clicking HERE.

Appendix F: Hexadecimal Codes

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Appendix G: Labelcom Utility

The LABELCOM program allows data to be read from a serial input device, such as a bar code scanner or scale. The data that is received can then be used to fill in variable data on a label created in the software.

1. INSTALLATION.

This program (labelcom.exe) should be stored/run in the same directory as the label software. It uses the labelc.dll, english.lng and label.cfg files.

To install the program, double click on the LABELCOM file name.

It is best to create an icon for LABELCOM. To do this, simply right-click on the icon and choose Create Shortcut.

2. SETUP.

The LABELCOM Parameter settings are stored in a file with the suffix ".lcm". These parameter files are readable only by the labelcom.exe program. When the program is executed for the first time with no existing parameter file, an explanatory message appears:

The function of this program is to print labels using COM input. PRESS ALT+C FOR INITIAL SETUP.

A default parameter file called 'Default.lcm' is created.

When LABELCOM is running and waiting for a message to be received, the following items appear:

Monitoring Port

Designates the name of the Com port that LABELCOM is configured for. This is the port data will be read from.

Bytes Received

Designates the number of bytes contained in the message.

Messages Received

Shows the number of messages received.

Current Message

Shows the current data being received.

FieldName

FieldName is the variable field on the label that is being filled in with the scanned in data. This item could appear more than once if there is more than one variable field being filled by the scanned data.

From the LABELCOM screen, you are given the opportunity to Change the setup or to quit. Clicking the Quit button will close the LABELCOM program.

If you need to view or change the LABELCOM settings, click on Change Setup. In the LABELCOM setup screen, you will be presented with several screen:

Filename

Enter the name of the file used to store the setup parameters, or the name of an existing file to recall.

Port

Select the port through which input data will be received.

Baud Rate

Select or enter the baud rate of the input device. This selection must match the baud rate that the input device is configured for.

Data Bits

Select a value for Data Bits. Choose a number from 4 to 8. This selection must match the number of data bits your input device is configured for.

Stop Bits

Select a value for Stop Bits. Choose 1, 1.5 or 2. This selection must match the Stop Bit your input device is configured for.

Parity

Select a value for Parity from the list. Choices are: 0-None, 1-Odd, 2-Even, 3-Mark, 4-Space. This selection must match the Parity setting your input device is configured for.

Flow Control

Select the method for input flow control. Enter 0 if unknown. Choices are: 0-None, 1-XON/XOFF, 2-DTR, 3-RTS

For information on configuring your input device, please refer to the User's Manual for your input device.

Format Name

Enter the name of the format to be printed.

Duplex Print

Enter Y to duplicate the print job on a second printer, or N to print on a single printer.

Printer Number

Select the number of the printer to use. Choose the Default printer to print the selected format on the printer it was designed for. Select another printer from the list if you wish to print the selected format to a different printer.

Sample Message

Please use the input device to send a sample message to the port now, or if this is not possible enter a typical input message using the keyboard (use hexadecimal representations for control characters. For example, the characters: \x0D should be entered to represent a carriage return).

If the Sample Message contains control characters (such as carriage returns and line feeds) those control characters are expected to be in each input message. If the message ends in control characters then it can be variable in length.

Extract Data

Insert one or more pairs of square brackets around the data to be extracted for printing. Example if the Sample Message is:

ABC1234567

The Extracted data could be: ABC[1234567]

If you have more than one field that needs to be filled in with data, you can simply perform two inputs for the Sample Message, and for the Extracted Data message, you can place brackets around the data to be used for each field. For example, if there are two fields that need to be filled, the sample message would be as follows:

Sample Message: 12345\x0D\x0A123456789\x0D\x0A

and the extracted data message would be as follows:

Extracted Data: [12345]\x0D\x0A[123456789]\x0D\x0A

After the first input, the LABELCOM program will wait for the second input before printing a label because the message will not be considered complete until it receives both carriage return/line feed pairs.

Receiving Field

Select the format field name or enter a variable name to receive the message data that will be input.

Only NAMED variable fields in a format can be filled in by this program. In other words, the field(s) must be When printed or database fields with a field name specified.

NOTE: If there is another variable field on the format that is not filled in with the data from the received message, a value can be specified for this field as well by entering the value in a separate prompt. A separate screen item designating the field name appears along with an input box for the data.

Custom Processing

Enter Y if you need to add statements to modify values of format variable fields (or format name). For example if you want to print a different format based on the value that was received, select Yes.

Procedure

This item appears if you selected Yes for Custom Processing. This item allows you to write a custom program sequence.

Programs can use the following three types of statements:

a. variable = expression

This can be:

FORMATNAME = to specify a new format

VARIABLENAME = to specify a field value

FORMATCOUNT = to specify the number of labels to print

NOTE: When there is a incrementing/decrementing number on the format, this value is be the number of batches or the number of times to increment/decrement the field. To print multiple copies of the same Serial Number enter **FORMATCOUNT="1,2"** for the Procedure. This will print 2 copies of the same Serial Number for each scan.

b. if (condition)

```
 { ...statements }

 else

 { ...statements }
```

c. while (condition)

```
 { ...statements }
```

String constants must be enclosed in quotes. For Example:

```
SERIALNUM = "ABC"
```

The data can also be enclosed using single quotes. If you are using the double quotes (") to designate the inch mark, you must use single quotes around the data:

```
 SIZE = '1 1/2" '
```

If you are using single quotes to designate the foot mark, you must use double quotes around the data:

```
 size = "1 1/2' "
```

For example, if you want to print a specific quantity of labels for each message received, you can specify the quantity as follows:

```
formatcount = 3
```

For each scan, there will be 3 labels printed.

If you want to print a different format based on the value received, you can specify a simple condition using the value received:

```
 if (PARTNO <= 1000)

 {formatname = "a.fmt"}

 else

 {formatname = "b.fmt}
```

For each input, the variable field, partno will be compared to the value 1000. If the value for partno is less than or equal to 1000, then the format called a.fmt will print. If the value for partno is greater than 1000, then the format called b.fmt will print.

You must click OK to save the settings.

3. RUNNING MULTIPLE VERSIONS OF LABELCOM.

It's possible to run multiple instances of the program by including the name of a parameter file on the command line, for example:

labelcom.exe \wineasy\com1parm.lcm

labelcom.exe \wineasy\com2parm.lcm

The two parameter files must specify two different COM ports. If there is no command line parameter, the file name is taken from label0.ini (the last file used).

4. PROGRAMMING NOTES.

Expressions used custom programming follow the same rules as the software's arithmetic expressions. Variables can be either format field names, command file keywords such as "formatname" and "formatcount", and temporary variable names.

Arithmetic/Expression summary

There is no distinction between numeric and string variables. ALL VALUES ARE (variable length) STRINGS. Attempting to do arithmetic on non-numeric variables gives the value "???". Comparison of two values which are valid numbers is an ordinary numeric comparison. For example "-2" < "0" is TRUE.

If either operand is NOT numeric, then a character string comparison is performed. In this case, the ASCII value of the character is used for the comparison. Logical truth has the value "1" and Logical false has the value "0".

String constants must be in quotes, but numeric constants can be either quoted or not (since they can't be mistaken for field names/variables):

DATA + 67 and DATA + "67" are indistinguishable.

Advanced Functions

1.) Create a text field and name it "BARDATA"

For 'Source of Data' choose; 'F-Fixed'

For 'Fixed Data' enter; "010583005".

NOTE: This is your starting data string, you may want to change

this to a 'When Printed' source of data, or whatever type of data

source meets you application's needs.

2.) Create another text field and name it "DIGIT1",

For 'Source of Data' choose; 'A-Arithmetic'

For 'Calculation' enter; "SUBSTRING(BARDATA,1,1)"

NOTE: This is selecting the first digit of the starting data, and

making it its own field.

3.) Create 8 more text fields and name them "DIGIT2" through "DIGIT9"

For 'Source of Data' choose; 'A-Arithmetic'

For 'Calculation' enter; "SUBSTRING(BARDATA,x,1)" x = 2 for the second, 3 for the third, Up to 9 for the last text field.

NOTE: This is selecting the next 8 digits of the starting data, and

making them own fields.

4.) Create another text field and name it "TOTAL",

For 'Source of Data' choose; 'A-Arithmetic'

For 'Calculation' enter; "((DIGIT1*9)+(DIGIT2*8)+(DIGIT3*7)+(DIGIT4*6)

+(DIGIT5*5)+(DIGIT6*4)+(DIGIT7*3)+(DIGIT8*2)+(DIGIT9*1))/9"

For 'Decimal Places' enter; 2

For 'Special Formatting' choose; '6-Custom Numeric/Amount Format'

For 'Format String' enter; "99.99"

NOTE: Each digit is multiplied by its position weight, then added

together and divided by 9. The result is then forced to have 2

digits past the decimal, the first is the number that we need as

the remainder. The second umber is needed to act as a buffer for

rounding of any extra digits past the second. The format string assures that the data will be 4 digits even if the resulting data is less than 10, i.e.- 5 will be 05.00 not 5.00 this is important for the next step.

5.) Create another text field and name it "CHECKSUM",

For 'Source of Data' choose; 'A-Arithmetic'

For 'Calculation' enter; "SUBSTRING(TOTAL,4,1)"

NOTE: The fourth position is selected for use as the remainder. The decimal occupies a position, so the fourth position is actually the first digit to the right of the decimal.

6.) Create another text field and name it "DATA",

For 'Source of Data' choose; 'L-Link'

For 'Number of Link Fields' enter; "2"

For 'Link Field 1' enter; "BARDATA"

For 'Link Field 2' enter, "CHECKSUM"

NOTE: The starting data and the resulting checksum is combined to make the bar code data with the mod 9 weighted check digit.

7.) Create a bar code field and name it "BARCODE",

For 'Source of Data' choose; 'C-Copied'

For 'Name of Copied Field' enter; "DATA"

Any fields that you do not want to print can be made into 'PHANTOM FIELDS' by selecting 'NO'for 'Enable Printing'. These fields can then be placed out of the way on the format.

Steps 2 and 3 were added for explanation purposes, There is a way to

shorten this process by eliminating steps 2 and 3, and entering the

following for 'Calculation' in step 4;

((SS(BARDATA,1,1)*9)+(SS(BARDATA,2,1)*8)+(SS(BARDATA,3,1)*7)+(SS(BARDATA,4,1)*6)+(SS(BARDATA,5,1)*5)+(SS(BARDATA,6,1)*4)+(SS(BARDATA,7,1)*3)+(SS(BARDATA,8,1)*2)+(SS(BARDATA,9,1)*1))/9

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Appendix H: Advanced Programming Functions

Advanced Programming Functions

Calculating a Check Digit

Arithmetic/Expression summary

Advanced Programming Functions

Calculating a Check Digit

The following example calculates an unsupported MOD 9 check digit:

1. Create a text field and name it "BARDATA"

  Choose Fixed for Source of Data

  Enter "010583005" for the Fixed Data

NOTE: This is your starting data string. You may want to change the Source of Data to When Printed or whatever type meets your needs.

2. Create another text field and name it "DIGIT1"

  Choose Arithmetic for Source of Data

  Enter "SUBSTRING(BARDATA,1,1)" for Calculation

  NOTE: This is selecting the first digit of the starting data and making it its own field.

3. Create 8 more text fields and name them "DIGIT2" through "DIGIT9"

  Choose Arithmetic for Source of Data

Enter "SUBSTRING(BARDATA,x,1)" for Calculation where x = 2 for the second field and so on up to 9.

NOTE: This is selecting the next 8 fields of the starting data and making them their own fields.

4. Create another text field and name it "TOTAL"

Choose Arithmetic for Source of Data

Enter "((DIGIT1*9)+(DIGIT2*8)+(DIGIT3*7)+(DIGIT4*6)+(DIGIT5*5)+(DIGIT6*4)+(DIGIT7*3)+(DIGIT8*2)+(DIGIT9*1))/9" for Calculation

Enter "2" for Decimal Places

Choose "Custom Numeric/Amount Format" for Special Formatting

Enter "99.99" for Format String

NOTE: Each digit is multiplied by its position weight, then added together and divided by 9. The result is then forced to have 2 digits past the decimal, the first is the number that we need as the remainder. The second number is needed to act as a buffer for rounding of any extra digits past the second. The format string assures that the data will be 4 digits even if the resulting data is less than 10, i.e. -5 will be 05.00 not 5.00, this is important for the next step.

5. Create another text field and name it "CHECKSUM"

Choose Arithmetic for Source of Data

Enter "SUBSTRING(TOTAL,4,1) for Calculation

NOTE: The fourth position is selected for use as the remainder. The decimal occupies a position, so the fourth position is actually the first digit to the right of the decimal.

6. Create another text field and name it "DATA"

Choose Link for the Source of Data

Enter "2" for the Number of Fields to Link

Choose "BARDATA" for Link Field 1

Choose "CHECKSUM" for Link Field 2

NOTE: The starting data and the resulting checksum are combined to make the barcode with the MOD 9 Weighted check digit.

7. Create a Barcode Field and name it "BARCODE"

Choose Copied for Source of Data

Choose "DATA" for the name of the copied field

Any fields that you do not want to print can be made into "phantom" fields.

Steps 2 and 3 were added for explanation purposes. You may eliminate these two steps by changing step 4 to the following:

4. Create another text field and name it "TOTAL"

Choose Arithmetic for Source of Data

Enter "((SS(BARDATA,1,1)*9)+(SS(BARDATA,2,1)*8)+(SS(BARDATA,3,1)*7)+(SS(BARDATA,4,1)*6)+(SS(BARDATA,5,1)*5)+(SS(BARDATA,6,1)*4)+(SS(BARDATA,7,1)*3)+(SS(BARDATA,8,1)*2)+(SS(BARDATA,9,1)*1))/9" for Calculation

Enter "2" for Decimal Places

Choose "Custom Numeric/Amount Format" for Special Formatting

Enter "99.99" for Format String

Arithmetic/Expression summary

This is a summary of the operators and functions which can be used in expressions (arithmetic, conditional print and in the procedures mentioned above).

+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Remainder (Example 16% 7 is 2)
|	String concatenation
<	Less than comparison
<=	Less than of equal comparison
!= or #	Not equal comparison
== or =	equal comparison

LIKE	Pattern matching comparison operator
NOT LIKE	Negation of LIKE
>=	Greater than or equal comparison operator
>	Greater than comparison operator
$	Whether or not the first string contains the second
|| or OR	Logical 'OR'
&& or AND	Logical 'AND'
! or NOT	Logical 'NOT'

There is no distinction between numeric and string variables. ALL VALUES ARE (variable length) STRINGS. Attempting to do arithmetic on non-numeric variables gives the value "???". Comparison of two values which are valid numbers is an ordinary numeric comparison. For example "-2" < "0" is TRUE.

If either operand is NOT numeric, then a character string comparison is performed. Logical true has the value "1" and Logical false has the value "0".

String constants must be in quotes, but numeric constants can be either quoted or not (since they can't be mistaken for field names/variables):

DATA + 67 and DATA + "67" are indistinguishable.

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Appendix I: Creation of a Connection String

Jet 4.0 OLE DB Provider Connection	OLE DB Provider for ODBC Drivers Connection

A Jet connection is used to connect to Microsoft Access Databases (.mdb). The OLEDB Provider for ODBC Driver Connection can be used to connect to almost any database with an existing data source name (DSN).

Sample Microsoft Jet 4.0 OLE DB Provider connection

1. On the provider tab select '**Microsoft Jet 4.0 OLE DB Provider**' as your provider and then click the '**Next**' button
2. You are then presented with the *connection* tab. In section number 1 enter or browse to the name of the database you want to connect to.
3. If the database is not password protected you can skip to the next step. If the database is password protected in section number 2 there is a place to enter a user id and password, fill in this section if your database has multiple users and passwords.

NOTE: To set the password for a single user protected MDB database, you need to enter the password into the "**Jet OLEDB:Database Password**" Property on the ALL tab. Do NOT set any password on the Connection Tab.

4. Click the 'test connection' button. You should be presented with a message box stating that the test connection has succeeded. If the connection failed you will need to double check the values you entered. If you need help with establishing a connection you can click on the '**Help**' button in the Data Link Properties dialog box. This will display additional information from Microsoft on using the dialog box and defining connection information for each OLE DB provider.
5. Click OK to return to the Software and enter the rest of the prompts for the field.

Sample Microsoft OLE DB Provider for ODBC Drivers connection

1. On the provider tab select '**Microsoft OLE DB Provider for ODBC Drivers**' as your provider and then click the '**Next**' button
2. You are then presented with the *connection* tab. You can select:
    a. **Use Data Source name** and then select the ODBC data source name (DSN) you want to access from the list. You can add more sources through the ODBC Data Source Administrator. Refresh the list by clicking Refresh. Choose enter or browse to the name of the database you want to connect to.
    b. **Use Connection String** this option allows you to type or build an ODBC connection string instead of using an existing DSN. Clicking the '**Build**' button opens the Select Data Source dialog box. Once you select a data source, the connection string in that data source will appear in the Connection tab of the Data Link Properties dialog box.
3. If the database is not password protected you can skip to the next step. Otherwise enter the password here.
4. In the '**Enter the initial catalog to use**' prompt, type in the name of the catalog (or database), or select from the drop-down list.
5. Click the 'test connection' button. You should be presented with a message box stating that the test connection has succeeded. If the connection failed you will need to double check the values you entered. If you need help with establishing a connection you can click on the '**Help**' button in the Data Link Properties dialog box. This will display additional information from Microsoft on using the dialog box and defining connection information for each OLE DB provider.
4. Click OK to return to the Software and enter the rest of the prompts for the field.

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